ARCHITECTURAL RECORD

BUILDING TYPES STODY

SCHOOLS

239

OCTOBER 1956

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Architects: Grassold-Johnson Associates
Welton Becket & Associates





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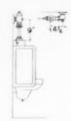
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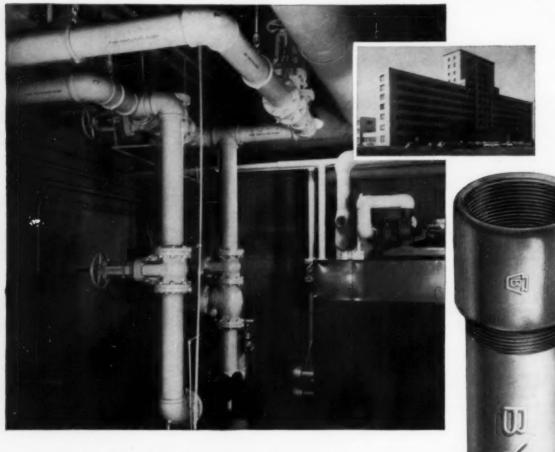
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ARCHITECTURAL RECORD

October 1956 Vol. 120 No. 4

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Cover: Olympia Primary School, Daly City, Calif., Mario J. Ciampi, Architect; Rondal Partridge

An Inspiring Place of Worship

Inspired by a really majestic site in one of the National Monuments, the architects designed a chapel which of itself has great power, and which solves problems of environment as few contemporary buildings do. Chapel of the Holy Cross, Sedona, Ariz.; Anshen & Allen, Architects

The Six Determinants of Architectural Form

The fashionable and the functional are not the only determinants of form in architectural design; throughout history architecture has found no less than six basic demands, some of which have lately been ignored. An article by Paul Rudolph

One Hundred Years of Significant Building

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Architecture AND Engineering

It has frequently been said of late that great engineering of itself rarely is great architecture, that innovative structure is but the means to an end. Here a well-known architect uses engineering in his own way.

Memorial Hall for Japanese Steel Workers

Yawata Arena, Kyushu, Japan; Raymond & Rado, Architects

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Should a House Merge with the Ground

When the house has a beautiful rural setting there is always the problem of where the house leaves off and the country begins. Here are several examples of an idea used by one architect to define the house and its outdoor areas and to separate them from the rest of the countryside. Platform Houses. Edward L. Barnes, Architect

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Highly Functional Plant for Helicopters

Manufacturing Plant for Sikorsky Aircraft Division, United Aircraft Corporation, Stratford, Conn.; F. A. Fairbrother and Geo. H. Miehls, Architect and Engineer

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Louis Sullivan Honored Again

On the hundredth anniversary of his birth The Art Institute of Chicago will present a major exhibition of his work, which will remind us again of the wholeness of his architecture, a quality constantly sought but rarely found. A preview of the exhibition, "Louis Sullivan and the Architecture of Free Enterprise"

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'Incor' Speeds Completion of 650-Car Garage

Dallas Adolphus Hotel

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(Left) View showing precast channels in place for first floor (Right) photo shows manner in which floors were completed—excellent job organization and "Incor" speeded construction of well-designed,

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Riverside Park Intermediate School, Springfield, Vermont
Architect: Perley F. Gilbert Associates, Lowell, Mass. . . .
Contractor: Frechette-Clough Construction, Tupper Lake, N.Y. Plumbing Contractor: Frank H. Gallagher & Son, Salem, Mass. . . . Supt. of Schools: Lyman W. Bole, Springfield, Vt.

Kingston Estates Elementary School, Delaware Township, N.J. Architects and Engineers: Edwards and Green . . . Plumbing Wholesaler: Fleck Co., Camden, N.J. . . . Plumbing Contractor: Charles H. Knecht & Sons, Camden, N.J.





Commodore Perry Joint Area School, Sheakleyville, Pennsylvania

Architect: The Thayer Co., New Castle, Pa. . . . Supervising School Principal: Oshall Pilgram, Sheakleyville, Pa. . . General Contractor: C. DeChicchis & Co., Clairton, Pa. . . . Plumbing Wholesaler: The Fischler Co., New Castle, Pa. . . . Plumbing Contractor: Charles L. Pile, New Castle, Pa.

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THE RECORD REPORTS

PERSPECTIVES

WRIGHT THE UNPREDICTABLE, and the long-time enemy of skyscrapers, at least when they're in the wrong place (i.e., the city), announced plans recently for a whopper, to be built in Chicago. The building, to house employes of Illinois, Cook County and Chicago, would be one mile high with 510 stories. The Empire State Building is a mere 1250 ft.

THE HIGH ROAD: the fact that Congress passed the \$28 billion highway bill has caused a flurry of speculation and totting up of figures in circles likely to be affected by it - and that means practically everybody. The American Road Builders' Association cast a practiced eye over the supplies to be used in the 13-year program, and estimated that it will require, yearly, 113 million barrels of cement, 663 million tons of concrete aggregates, 9.2 million tons of bituminous products, 3.6 million tons of steel, 680 million bd ft of lumber for forms, 22 million linear ft for pilings. The current highway construction labor force of 250,000 will be increased by 130,000 by 1957. and will add still another 160,000 by 1960. And as if all this weren't enough, the Construction and Civic Development Department of the National Chamber of Commerce came up with a forecast of side effects fully as awesome as the program itself, including as they do ancillary construction for 40 thousand miles of road - filling stations, restaurants, motels, police stations - as well as suburban, shopping and industrial developments.

The house of seagram makes all sorts of news these days. The latest is the award of a plaque from the Committee for a Quiet City, grateful for the replacement of the rivet by the bolt in the erection of the building's steel frame. The technique has reduced construction noise by 50 per cent, the committee applauded.

To see ourselves: Ian McCallum, executive editor of the British Archilectural Review, played Baedeker for his countrymen upon returning home after a year spent in the U.S. as visiting lecturer at Yale. Recreating a flying trip from coast to coast for readers of The Architects' Journal, Mr. McCallum took New York as his point of embarkation. There, he said, 'The boom alone . . . was insufficient to explain the chaos and inconvenience. One theory is that Americans have a guilt complex about not having been bombed and this is their way of experiencing at least the after-effects." He admired Lever House and the Seagram and Chase Manhattan projects, but deplored New York's zoning regulations which "result in buildings like enormous club sandwiches cut to the shape of a wedding cake." From New York Mr. McCallum made his way north, admiring on the way Herbert Matter's graphic design for the New Haven railroad, and stopping at New Canaan to see Philip Johnson's glass house, "the most satisfactory 20th century building I know." Thence to New Haven, where he disapproved but nonetheless liked Yale's Gothic campus: "Such enclaves of historicism as Yale represents have a meaning to America that we may find it hard to understand, weighted down as we are by the responsibilities of our ancient and heavily built-up heritage. If we were to wipe these islands clear of buildings and start again, could you put your hand on your heart and say you would not hanker after a few old stones, even if they had to be faked a bit?" Next was Detroit, and the General Motors Technical Center, which in spite of some faults "is worth traveling 4000 miles to see." Chicago was a "Mies pilgrimage" to visit at the shrines of the Lakeshore Drive Apartments and Illinois Institute of Technology campus, and in Denver, I. M. Pei's Mile High

Center had a piazza which made up for the faults Mr. McCallum found in the building. From Denver, the traveler pressed on westward, over the Great Divide to San Francisco, where he "didn't find many interesting buildings. There is of course the Bay Region Style, and seven years ago this might have seemed more interesting. . . . But after the adventurous technical explorations of the eastern architects and the esthetic sophistication of a Mile High Center, the cozy redwood vernacular of the Bay Region, combined though it may be with the large sheets of plate-glass and pleasing concepts of indoor-outdoor living, does seem a little fusty and unadventurous. . . . I have the feeling that in another seven years this region will have broken with the more stultifying aspect of its vernacular tradition and will have some pretty interesting things to show." Los Angeles, the terminal point of his tour, Mr. McCallum termed "unerringly suburban." He concluded his observations with a bird'seye view of the American architectural scene as a whole: "If there's one thing that a brief visit to America teaches you, it is that architecture is a live art there - money's thrown away on it, it makes news, it's kicked around, it's vulgar, refined, reckless, extravagant, cheeseparing, naive, sophisticated. . . . I suggest you thumb a ride and go have a look for yourself."

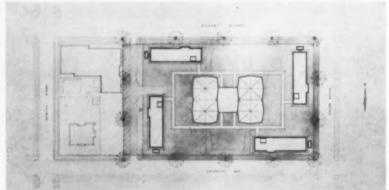
Word comes from paris, via La Journée du Baliment, that the crudle of modern art, and the haven for artists of all nations, will clear one of its slums for La Cité Internationale des Arts. The architecture of the new right-bank quarter will not be avantgarde, however, and will in fact avoid "aggressive modernism" by employing "a sort of Louis XIII style." Chacun à son goût, as they say.

THE RECORD REPORTS: BUILDINGS IN THE NEWS

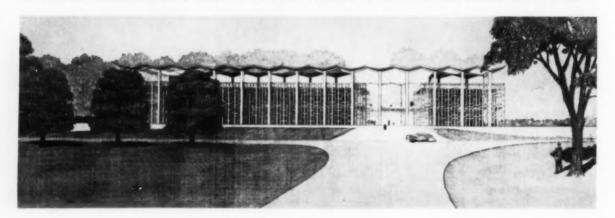
UNIVERSITY OF CALIFORNIA CHOOSES



Design from Warnecke and Warnecke showed separate dormitory unit at each corner of the sile, the four dining rooms and common recreation room at the center joined by covered walkways. The jury called it "an excellent solution of brilliant simplicity," commended it for its harmony with the surrounding buildings, and, in spite of some exceptions, generally liked the interior arrangements, particularly in the living quarters



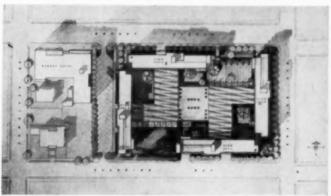
. . AND IN MEMPHIS, THREE YOUNG ARCHITECTS WIN A SIMILAR CONTEST

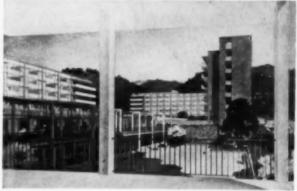


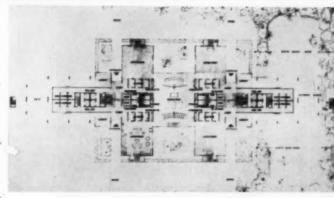
WARNECKE DORMITORY DESIGN IN INVITATIONAL COMPETITION . . .

In a competition open only to those architects invited to enter — Welton Becket Associates; Gardner Dailey; Vernon Demars, Joseph Esherick and Ernest Kump, in association; John Funk and Kitchen and Hunt, in association; Pereira and Luckman; Warnecke and Warnecke; and Weihe, Frick and Kruse—the University of California at Berkeley selected the Warnecke design for its new residence hall. The program called for a dormitory for 800, to be comprised of four self-contained units for 200 each, with a separate dining hall for each unit, but a common recreation (Continued on page 12)

Honorable mentions were given to the entries of John Funk and Kitchen and Hunt (lop) and Pereira and Luckman (boltom)









FOR A FINE ARTS CENTER

In another competition open only to local architects (though it was not invitational), Memphis awarded the commission for its new Fine Arts Center to architects William Mann and Roy Harrover, 33 and 28 years old respectively, with Leigh Williams, 28, as associate. The jury remarked of the winning design, which includes an art academy, theater and concert hall in the single building, that it "belongs in the park" where it will be built, and that "it should be beautiful from any aspect as one approaches it." Construction will (Continued on page 12)



Second award went to architects A. L. Aydelolt and Associates for "an excellent

solution" calling for a group of buildings planned around a plaza

11

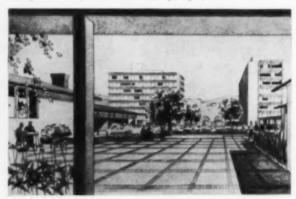
BUILDINGS IN THE NEWS

California Competition

room. The program also emphasized that "the Berkeley climate and the Berkeley residential architecture provide a background which has a significance for this building." Besides the award of the commission to the winning entry, other awards included \$3000 to each of the participants. Professional adviser was John Lyon Reid, F.A.I.A., and the jury was composed of Pietro Belluschi, F.A.I.A., Cambridge, Mass.; John Ekin Dinwiddie, A.I.A., New Orleans; Paul Thiry, F.A.I.A., Seattle; Mrs. Dorothy B. Chandler, University regent; Barnham P. Griffiths, a former regent.

Top: left, Weihe, Frick and Kruse; right, Gardner Dailey; Bottom: left, DeMars, Esherick and Kump; right, Welton Becket









Memphis Competition

begin "as soon as possible." First prize was \$7000. The second prize, of \$1500, went to the entry of A. L. Aydelott and Associates, and the third prize, of \$750, was awarded to Thomas F. Faires and Associates. Paul Schweickher, head of the department of architecture at Carnegie Institute of Technology, served as professional adviser, and members of the jury included architects Philip C. Johnson, New Canaan, Conn.; Paul Rudolph, Sarasota, Fla.; and editor Thomas Creighton of Progressive Architecture.

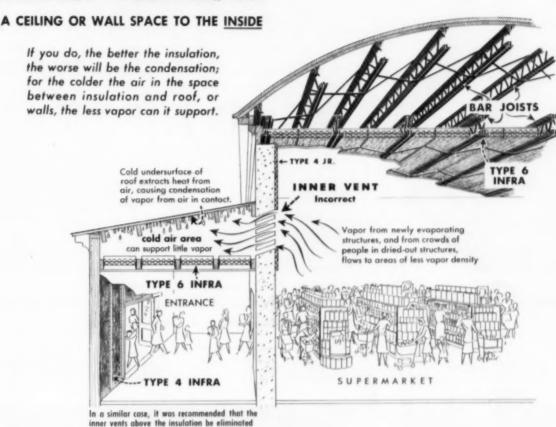
(More news on page 16)



Third prize entry from Thomas F. Faires & Associates was commended by the jury

for ils "pleasant cloister-like court" and "discipline in scale"

NEVER VENTILATE



In new construction, moisture is evaporating from many tons of cement and plaster. Vapor flows from areas of greater density into this small, cold space, an area of less vapor density and small vapor capacity.

Where scientific multiple aluminum is used, fortuitou vapor and water (for instance rain) will gradually flow out, as vapor, through exterior walls and roofs as vapor pressure develops within. The vapor cannot back up through the continuous, almost impervious aluminum. It will flow out because walls and roofs have substantial permeability by comparison, far greater than the required 5 to 1 ratio. Infiltration under the flat stapled flanges of multiple aluminum is slight.

Unusual amounts of vapor, as from crowds in theatres, churches, schools, stores, etc. must be adequately vented to the outside. Each person breathes out and perspires vapor, winter and summer, at the rate of 3 lbs. a day.

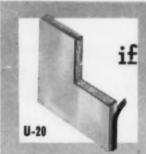
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Pekin Community High School, Pekin, Illinois. Architect: Foley/Hackler/Thomp





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THE RECORD REPORTS

(Continued from page 12)





TRADES SHOW AUSTRALIANS LATEST IN DESIGN AT CONVENTION

New structural principles, new materials, and new forms of construction were exhibited to architects and public at the recent Sixth Australian Architectural convention in Adelaide, South Australia.

The exhibition, first of its kind in Australia, was composed of 14 buildings which housed trade exhibits. The buildings themselves were exhibits of advanced technique, materials, and design.

More than 100,000 persons visited the exhibition during a three-week period. Site for the exhibit was Botanic Park, located in the center of Adelaide, which provided a natural setting for the temporary buildings. The cost of materials and labor was paid for by the building industry and associated manufacturers and agents. A committee of Australian architects designed the exhibition buildings.

Integration of art and architecture at the exhibit was effected by use of sculpture and murals. Australian artists and





International Pavilion (top photo), at Australian exhibition, houses architectural exhibits from 12 countries. Constructed of wood and canvax, the five-pointed structure resembles a star. Lower photographs are of trades pavilion (left), formed from three pinned arches; and the government pavilion (right), made of glass and timber

sculptors contributing were Wladyslaw Dutkiewicz, S. Ostoja-Kotkowski, Vojta Marek, and Francis Roy Thompson. Dutkiewicz's steel rod and wire sculpture of emus is shown in photograph, above left. Keith Neighbor, architect, was chairman of the exhibition committee.

The convention of the Royal Aus-

tralian Institute of Architects had as its theme "Architecture and Man," and covered in symposiums such subjects as design for the nation, the community and the individual. Pietro Belluschi, Dean of the School of Architecture and Planning, Massachusetts Institute of Technology, was keynote speaker at the convention.

(More news on page 16B)



Timber house (left) at exhibition illustrates possible uses of timber in various forms, from beams to bathtub. Concrete



pavilion (center) is composed of six bays of 18 ft span prestressed periphery beams which carry a 3 ft grid of post-stressed



beams within them. Glass pavilion (right) is a glass cube with minimum of other structural materials



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minimized thanks to these extra precautions. Uniform thickness, accuracy of cutting, trueness and clarity of color, surface smoothness, ease of maintenance, built-in durability and dimensional stability are added inherent qualities of all tile made by Kentile, Inc. The tile illustrated is "Sparkler", one of the many colors available in the Carnival KenFlex line.

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Sources for Architects: II

PERIODICALS POSE LATEST THEORIES IN EDUCATION, SCHOOL DESIGN

Education, a field which has shown an insatiable need for building in the last ten years (see Building Types Study No. 239, pp 221–256), is the subject of a profusion of printed words ranging from abstract theories to down-to-earth planning.

Research data, new ideas, criticisms, and reports on current trends in school thought are available to architects through a variety of periodical publications. Some of the publications deal with educational theory exclusively and are ripe material for the architect who wants to develop a background in the problems involved in the educational field. Others get down to the specifics of what a good school needs, from funchroom facilities to classroom lighting

Several monthlies in the school publication field are concerned especially with topics of school administration and school planning. Such magazines as The American School Board Journal, The School Executive, College and University Business, and The Nation's Schools have fairly regular sections on school design, along with interesting and informative discussions of administrative problems and policies which have both indirect and direct bearing on design.

American School and University, an annual published this year in two volumes, is a composite of school building materials presented along with reports on recent developments in school architecture and discussions of design theory.

A new magazine, School Planning, began publication in June. Darell Boyd Harmon is chairman of the editorial advisory board (Chicago, III.)

Special research bulletins are available from a number of different educational sources. Some of the latest are Visual Dala For School Lighting Design, Department of Engineering, University of California, Los Angeles; School Life, U. S. Department of Hea'th, Education and Welfare, Washington, D. C.; Common Sense in School Lighting, The American Association of School Administrators, Washington, D. C.

Following is a list of periodicals dealing with schools and school design:

AMERICAN SCHOOL BOARD JOURNAL. Published menthly by Bruce Publishing Company, Milwaukee, Wis. AMERICAN SCHOOL AND UNIVERSITY, Published annually by American School Publishing Corp., New York

THE CATHOLIC EDUCATOR. Published monthly except July and August by Jeseph F. Wagner, Inc., New York

CATHOLIC SCHOOL JOURNAL. Published menthly by The Bruce Publishing Co., Milwaukee, Wis.

COLLEGE AND UNIVERSITY BUSINESS. Published monthly by Nation's Schools Division, The Modern Hospital Publishing Co., Inc., Chicago

INSTITUTIONAL FEEDING AND HOUSING.
"How to cut costs, improve service and provide better quality food in every mass feeding operation." Published monthly by Conever-Mast Publications, Inc., New York

INSTITUTIONS CATALOG DIRECTORY. Published annually by Domestic Engineering Company, Chicago

INSTITUTIONS MAGAZINE. "Concentrates on problems of mass feeding and mass housing . . . timely information specific to educational theory or practices." Published monthly by Domestic Engineering Company, Chicago

THE NATION'S SCHOOLS. Published monthly by Nation's Schools Division, The Modern Hospital Publishing Co., Inc., Chicago

SCHOOL EXECUTIVE—SCHOOL EQUIPMENT NEWS. Sponsors "Competition for Better School Design" annually. Published monthly by The American School Publishing Corp., New York

Following is a list of general education publications:

A.I.A. BULLETIN. Published monthly by the American Library Association, Chicago

AMERICAN CHILDHOOD. Published monthly by Milton Bradley Company, Springfield, Mass.

AMERICAN TEACHER. Published quarterly (February, April, October, December) by The American Federation of Teachers, Chicago

AMERICAN VOCATIONAL JOURNAL. Official organ of American Vocational Association, Inc. Published monthly by A.V.A., Washington, D. C.

AUDIO VISUAL GUIDE. Published monthly by Educational & Recreational Guides, Inc., Maplewood, N. J. BUSINESS EDUCATION FORUM. Official organ of United Business Education Association. Published monthly October through May by U.B.E.A., Washington, D. C.

BUSINESS EDUCATION WORLD. Published monthly except July and August by the Gregg Publishing Division of the McGraw-Hill Book Company, New York

CHILDHOOD EDUCATION. Official organ of Association for Childhood Education International. Published monthly except June, July and August by A.C.E.I., Washington, D. C.

COLLEGE AND RESEARCH LIBRARIES. Official organ of Association of College and Reference Libraries. Published bimonthly by American Library Association. Chicago

EDUCATIONAL SCREEN. Published monthly by Educational Screen, Inc., Chicago

EDUCATION DIGEST. Published monthly by Prakken Publications, Ann Arber, Mich.

GRADE TEACHER. Published monthly by The Educational Publishing Company, Derien, Conn.

INDUSTRIAL ARTS & VOCATIONAL EDU-CATION. Published monthly by Bruce Publishing Co., Milwaukee, Wis.

THE INSTRUCTOR. Published monthly by F. A. Owen Publishing Co., Dansville, N. Y.

JOURNAL OF THE AMERICAN ASSOCIATION OF UNIVERSITY WOMEN. Published quarterly by the A.A.U.W., Washington, D. C.

N.E.A. JOURNAL. Official organ of the National Education Association of the United States, Washington, D. C. Published monthly.

N.A.S.S.P. SPOTLIGHT. Official organ of the National Association of Secondary-School Principals, Washington, D. C.

PROGRESSIVE EDUCATION. Official organ of Progressive Education Association. Published 6 times a year by P.E.A., University of Illinois, Urbana

SCHOLASTIC TEACHER. Published weekly by Scholastic Corp., New York

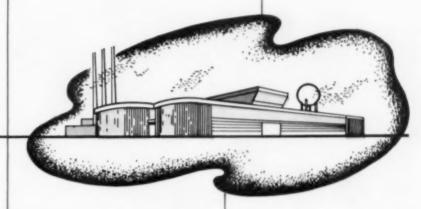
SCHOOL ARTS MAGAZINE. Published monthly by the Davis Press, Worcester,

STATE TEACHERS MAGAZINES, INC. Official organ of State Teachers' Associations, Chicago. Published for every state.

(More news on page 21)

Versatile Resolite...

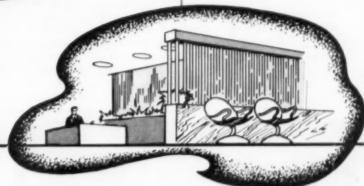
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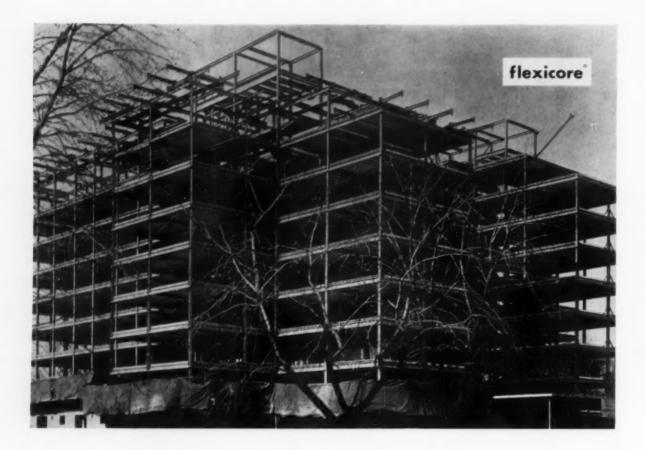
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This picture was taken during the erection of precast floors on the Shoreland Towers, Indianapolis, one of three luxury apartments designed by Paul I. Cripe, Inc., and built by L and L Building Corporation. All three used Flexicore on a steel frame. This method can cut a month or two off construction time on a job of this size, and give your client a month or two ad-

ditional rental income. Construction costs are cut by saving weeks of on-the-job labor and the usual delays of poured floors. The smooth underside of the Flexicore floors were exposed throughout, eliminating plaster ceilings. Find your nearest manufacturer in the list below and phone or write for more information on Flexicore construction.

Flexicare slabs are exposed to make attractive ceiling treatment for auto entrance, below left, rental unit, center, lobby, right.







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TEXAS, Houston, 4511 Kyle St. Flexicare of Texas, Inc.

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WISCONSIN, Beloit, PO 325 Mid-States Concrete Products Co. CANADA, —Toronto, Ontario Murray Associates, Limited CANADA, Montreal, Quebec Creaghan & Archibald Ltd. CANADA, Woodstock, Ontario Shell Industries Ltd. PUERTO RICO, Rio Piedras Flexicer Co. of Puerto Rico



American National Red Cross Building, Brooklyn, N. Y. Architect: Eggers & Higgins, New York City, Contractors: George F. Driscoll Co., Moccia Construction Corp., both New York City, Windows: Lupton Master Aluminum.

"On the Job"
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American Red Cross

The current slogan of the American National Red Cross is equally fitting for the windows in their new Brooklyn building. They are Lupton Master Aluminum Windows and will be "on the job" for many years of efficient service. Designed for permanent beauty these modern aluminum windows are backed by a reputation for quality that's fifty years old.

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Cincinnati Office: DeSales Bldg., 1620 Madison Road, Cincinnati 6, Ohio

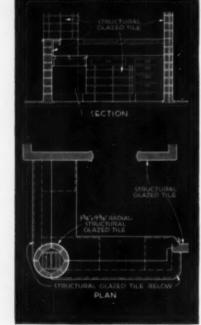
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The State of Construction

Figures released by F. W. Dodge Corporation revealed that contracts awarded in August showed a nine percent gain over contracts for that month in 1955. Awards totalled \$2,068,754,000. The gains were registered in all major building categories, including residential where, although the number of units planned continued to decline, the dollar volume of awards rose five per cent over those of August 1955. Meanwhile, J. D. Marshall, executive director of the Associate General Contractors of America, predicted to the A.G.C. board that 1956 would be "the first \$60 billion year in construction history"; these figures included estimates for maintenance and repair expenditures, however. Without these figures, the contractors predict a 1956 construction total of \$44.5 billion, a rise of four per cent over 1955. In a telegraphic survey of its members, the A.G.C. determined that a majority of them expected increases in construction over the next six months - in building, as opposed to highway and heavy construction, 53.1 per cent of the contractors expected an increase, 29.7 per cent expected no change, and only 17.2 per cent looked for a decrease. Contractors in 41 states

expected a shortage of structural steel during the next six months; about half as many states expected steel pipe and reinforcing steel to be in short supply. For details, see page 444.

Our Senior Citizens

One of the more ambitious undertakings in the recent efforts to "do something" about the country's rapidly expanding older population was a three-day Federal-State Conference on Aging held at Washington in June. Delegates included representatives of the state governors, members of Federal agencies handling problems of the aging and "resource persons." Joint sponsors were the Federal Council on Aging and the Council of State Governments, which recently issued a "memorandum" reporting the recommendations of the various panels at the conference. From the physical and mental health group came recommendations for Federal, state and private research on the development and evaluation of community health facilities, and for basic research in gerontology. The education and recreation panel suggested that Federal and state governments establish recreation agencies to study and promote recreation facilities for the aging. The housing

and living arrangements panel recommended that legislation be adopted to aid older citizens to take advantage of public housing and to ease the financing of housing for them; the panel also included a recommendation that "rehabilitation and re-evaluation of the older person be emphasized so that living arrangements are in proper relation to need." The conference, set up only as a forum where the governments could exchange views, did not act on any of the recommendations.

PR Prize

From the publication Public Relations News came a citation to the American Institute of Architects as one of the "ten best of the year" in PR activities. The award was bestowed for "building, through professional application of public relations, public understanding for and appreciation of the architect's work and his role as a community citizen."

Fermi Memorial Competition

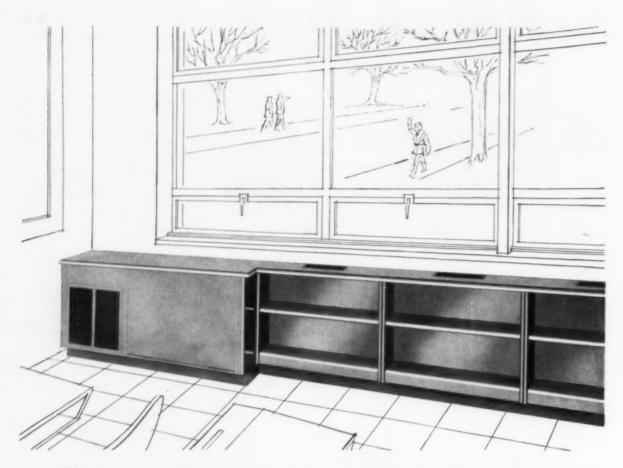
An international competition for a memorial pavilion to physicist Enrico Fermi has been announced by the Chicago Joint Civic Committee of Italian Americans and the Chicago Junior Association of Commerce. The pavilion, which is to include a plaza, exhibition space and an auditorium seating 300, will be built as part of Chicago's Fort Dearborn redevelopment. project. Awards will be, for the entry placing first, \$5000; second, \$3000; third, \$1000; and five awards for \$200. The jury members will be architects Ludwig Mies van der Rohe, Gordon Bunshaft, Jose Luis Sert, engineer Pier Luigi Nervi and physicist Dr. Lancelot Law Whyte. John O. Merrill, F.A.I.A., Chicago, has been appointed professional advisor to the competition, and information can be obtained from him at Fermi Memorial Competition, 100 W. Monroe St., Chicago 3, Ill.

Engineering Headquarters

The American engineering societies have elected, in spite of the blandishments of such cities as Chicago and Pittsburgh, to retain their offices in New York. Finding that the societies were outgrowing their present quarters at West 39th Street, the engineers some time ago appointed a joint investigating committee of civil engineers, mining, metal
(Continued on page 24)



"Technical aid, I think — government architect from Washington. He suggests we more the façade out 40 feet"



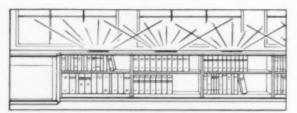
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10 East 40th St., New York 16, N. Y. PLANT AT PERTH AMBOY, NEW JERSEY

THE RECORD REPORTS

MEETINGS AND MISCELLANY

(Continued from page 21)

lurgical and petroleum engineers, mechanical engineers and electrical engineers. as well as the chemical engineers who now have offices outside of the Engineering Societies Building. The fifteen-man task committee recommended that the societies remain at their present 39th street location, or, if rebuilding there seemed impractical, acquire another site in the Grand Central area. They rejected a suggestion that the engineering society center might be built in the Columbus Circle neighborhood. Offers from the other cities were tempting - Chicago, Philadelphia and Pittsburgh were each reported to have offered \$1.5 million toward a new building, and in Pittsburgh the Mellons added their offer of another \$500,000 for research grants. Other cities vying for the engineers' choice included St. Louis, Washington, Hoboken, N. J., Kansas City, Miami and Shreveport, La. New York is not known to have offered anything as concrete as a million dollars, but in choosing to remain in the city the engineers were heeding the advice of former President Herbert Hoover and the persuasions of Mayor Wagner and Governor Harriman.

Georgia Tech in Zagreb

"A Half Century of Architectural Education," an exhibit of the works of graduates of the 50-year-old architectural school at Georgia Institute of Technology, was to be shown at the International Trade Fair held at Zagreb, Yugoslavia, September 7–20. The U. S. Department of Commerce chose this as one of the two entries from this country. Upon its return from Zagreb, the display will tour the U. S.

For Professional Coordination

The imminent opening of the Atlanta Building Industry Center has been announced by the Architects & Engineers Institute, Inc., a non-profit group backed by the Georgia Chapter of the American Institute of Architects and the Georgia Engineering Society. On November 1, the institute, which includes landscape architects, planners, contractors, surveyors and the Producers' Council as well as architects and engineers in its membership, will open the center in an 80,000 sq-ft building in downtown Atlanta. About half of the building will be given over to products display, described by institute vice president Bernard B. Rothschild as the "financial backbone" of the operation. Proceeds from the samples bureau will go into an educational and research fund. The rest of the building will house meeting rooms for the constituent organizations, a kitchen and a technical library.

The Modern Builder

To shed some light on the problems facing the construction industry in this technological age, the Armour Research Foundation of the Illinois Institute of Technology will sponsor a Modern Builders Conference in Chicago on December 6 and 7. Up for discussion: research planning as the architect sees it; architect-builder coordination; research in structural clay, wood and concrete products; contractor-engineer and realtor-operator problems in material handling; prefabrication; interior surfacing and services. Information is obtainable from J. J. Kowal, Conference Secretary, Armour Research Foundation of I. I. T., 10 W. 35th St., Chicago 16.

Architectural Schools (Cont'd)

At the University of Florida, Dr. Turpin C. Bannister has been appointed Dean of the College of Architecture and Fine Arts, it has been announced. Dr. Bannister, who was professor of architecture at the University of Illinois, will succeed Dean Emeritus William T. Arnett.

The University of Michigan has named Charles H. Sawyer director of its Museum of Art, Professor of Art in the College of Architecture and Design and Professor of Fine Arts in the College of Literature, Science and Arts. Mr. Sawyer goes to Michigan from his position as Dean of the School of Architecture and Design at Yale University.

And at Yale, Boyd M. Smith, Associate Dean of the School of Architecture and Design, will serve as acting dean upon Mr. Sawyer's departure.

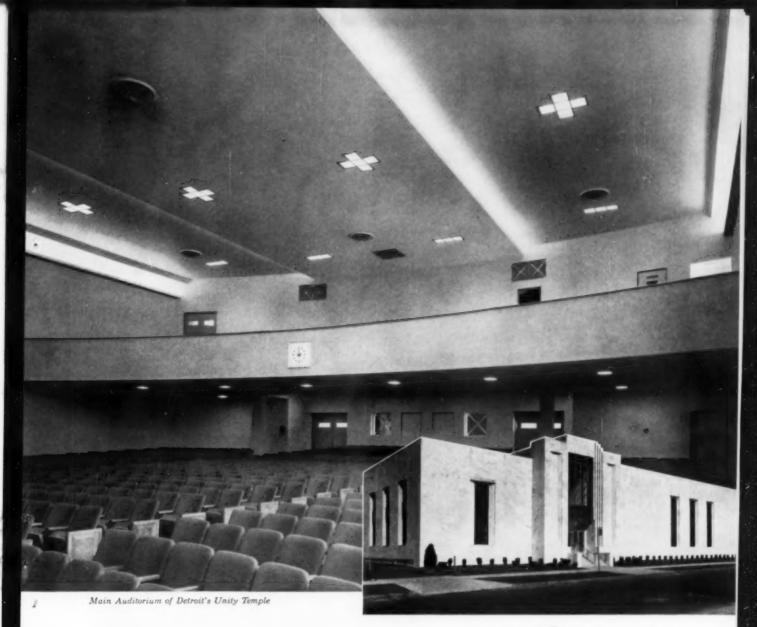
At the University of Pennsylvania, Professor Ian L. McHarg of the De-(Continued on page 28)



PICTURE OF THE TWAIN MEET-ING: Bucky Fuller's domes span the world. This one was built at the Jeshyn International Fair at Kabul, Afghanis-

tan, because the U. S. Department of Commerce detected a resemblance between a geodesic structure and the mobile yurts (lents) of Afghan tradition. According to

report, the Afghans loved it; the Commerce Department called it "unquestionably the most dramatic structure the United States has ever displayed in Southeast Asia"



KILNOISE acoustic plaster specified for Detroit's Unity Temple by

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KILNOISE Acoustic Plaster, used on the ceiling of the Unity Temple has helped to lend an atmosphere of simplicity to this place of worship. At the same time, it provides the perfect acoustical qualities so necessary in any sizeable auditorium.

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Mustic Tile Corporation of America has designed these smart "Matico" vinyl-asbestos tiles in the new Margaret Lowe colors. They give years of wear that cuts the entire in-service cost. Mastic Tile Corporation offices and factories located at Newburgh, N. Y., Joliet, Ill., Long Beach, Calif., and Houston, Texas.



THE RECORD REPORTS

MEETINGS AND MISCELLANY

(Continued from page 24)

partment of Land and City Planning reports that two years after the reestablishment of the program in landscape architecture at the school, the department has shown substantial gain in enrollments, due in part, perhaps, to a curriculum "expanded" to cover matters of urban landscape. "Landscape architecture," writes Mr. McHarg, "has contracted its sphere of professional activity in this country; it is believed that this tide must be reversed and that the landscape architect must turn from the suburb to the city; he must become concerned with the vacuum in urban design which falls neglected between the professions of architecture, civil engineering and city planning."

Cooper Union has taken its first step toward a degree-granting curriculum with the addition of a fourth year in its Department of Architecture. Previously, architectural students at the free-tuition school have had to finish the last two years of their training at other schools. The department, headed by Professor Esmond Shaw, hopes to have the five-year curriculum in effect by 1959.

The Beaux-Arts Institute of Design has become the National Institute of Architectural Education, the change in name marking a realization on the part of the trustees that the organization's functions are more complicated now than they were when the B.A.I.D. was founded in 1894. At the same time the trustees announced the initiation of a six-point program for the new organization: "(1) to provide facilities for the comparison of student work on a regional, national and international basis by sponsorship of competitions and exhibit; (2) to continue to administer the Lloyd Warren Fellowship, commonly known as the Paris Prize . . . : (3) to provide means for the interchange of information among architectural students; (4) to stimulate and promote the interest of the profession in the training and development of its younger members; (5) to foster the close integration of architecture with its engineering aspects and the fine arts . . . and (6) to encourage the highest standards in architectural education."

Colorado College has become the 24th liberal arts college to cooperate with

Carnegie Institute of Technology in its "three-two program." The program provides that science majors completing three years of work at Colorado may enroll for their final two years in Carnegie's science or engineering schools.

Again the Biennial

São Paulo's Museum of Modern Art has announced plans for its IV Biennial, to be held September through December 1957. Once more the museum will hold the International Exhibition of Architecture, and will include the third International Contest for Schools of Architecture. Preliminary material in both the architectural exhibit and the school contest is due by December 31. For information: Secretaria de Bienal do Museu de Arte Moderna de São Paulo, Bua de Abril, 230. São Paulo, Brazil.

At the M.M.A.

The Museum of Modern Art has announced the appointment of Arthur Drexler as Director of its Department of Architecture and Design. Mr. Drexel, since 1951 curator of the department, follows architect Philip C. Johnson as department head.

Worth the Winning

The American Association of School Administrators will hold its annual architectural exhibition of school buildings at its National convention, February 15-20, in Atlantic City; entries to be judged by the exhibition jury are due November 6, although the deadline for entry blanks was September 28. . . . Applications for the 1957 Arnold W. Brunner Scholarship, which carries a \$2400 grant for "advanced study in a specialized field of architectural investigation" will be accepted until November 15 by the New York Chapter of the American Institute of Architects, 115 E. 40th St., New York 16. . . . Rome Prize Fellowships, offered by the American Academy in Rome, carry a stipend of \$1250 a year, round trip transportation between New York and Rome, residence at the academy and an additional travel allowance; the academy's New York office will receive applications from students in architecture, landscape architecture, musical composition, painting, sculpture, history of art and classical studies until December 1, and information is available from the executive secretary, American Academy in Rome, 101 Park Ave., New York 17.

N. A. H. B.'s Annual Giant

Leonard L. Frank, chairman of the con-

vention committee for the National Association of Home Builders has announced that the association's plans are for a 13th annual convention and exposition even more immense and more populous than the last 12. Scheduled for January 20–24, the proceedings will be held in Chicago at the Conrad Hilton and Sherman Hotels and the Chicago Coliseum.

The Distaff Side

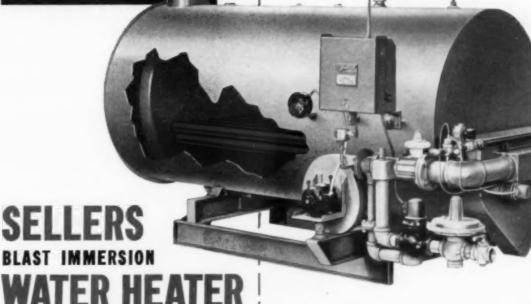
At its recent national convention in Minneapolis, the Association of Women in Architecture elected Jean Driskel, Los Angeles architect, its president. Other officers of the organization, which is an association of architects, interior designers, industrial designers and landscape architects, are Greta Grossman, vice president; Olive Chadeayne, secretary and Margaret Schoch, treasurer, all from the Los Angeles area.

Engineering Honors

The American Society of Civil Engineers has established two new awards - the Ernest E. Howard Award, which will go this year to Prof. Ralph E. Boeck of the Department of Civil Engineering at Marquette University, and the Thomas A. Middlebrooks Award, which will be shared by Allen J. Curtis, lecturer in engineering at the University of California at Los Angeles, and Prof. Frank E. Richart Jr. of the Department of Civil Engineering at the University of Florida. . . . The A.S.C.E. also announced the elevation of five men to honorary membership, the society's highest honor: George W. Burpee of the New York firm Coverdale & Colpitts, consulting engineers; Prof. Albert Haertlein, associate Dean of Engineering and Applied Physics at Harvard; Maj. Gen. Thomas M. Robins (U.S.A., ret.), formerly in the Office of the Chief of Engineers; Ole Singstad, of New York consulting engineers Singstad and Baillie; and Prof. Ralph B. Wiley, formerly head of the School of Engineering at Purdue University. . . . The John Fritz Medal, given annually by the American Society of Civil Engineers, the American Institute of Mining, Metallurgical and Petroleum Engineers. The American Society of Mechanical Engineers and the American Institute of Electrical Engineers, for "notable scientific or industrial achievement," went this year to Admiral Ben Moreell, chairman of the Board of Jones & Laughlin Steel Corp. and organizer of the U. S. Navy Seabees.

(More news on page 32)

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SCHEME TO EXTEND EAST FRONT OF THE CAPITOL RAISES A CONTROVERSY

Capitol Architect Stewart, Now Considering the Extension Proposal, Has Other Problems, Too, in Maintaining the Halls of Congress

Of the multi-million dollar renovations planned for the United States Capitol building and grounds over the next few years, the one to cause the most public comment is one requiring a relatively small part of the financial outlay scheduled — the proposed 40-ft extension of the east front of the building.

Critics, among them the American Institute of Architects and the Society of Architectural Historians, have opposed this step. At its 1955 national convention, the A.I.A. adopted a resolution in "strong opposition to the proposed alteration which would involve destruction of the historic and original east façade," and offered its services to Congress to try to find another way in which "additional space might be obtained without sacrificing the historic values of the building."

J. George Stewart, Architect of the Capitol, however, protests the idea that the extension would profane the original lines of the national shrine, and cites arguments based on historical records which, he claims, prove that the earlier architects of the building envisioned a movement forward of the central portion of the east face. He refers particularly to the original drawings by a former Capitol architect, Thomas U. Walter, who served from 1851 through the Civil War period, and to documents of that time. One of Architect Walter's reports to Congress during the War Between the States made this comment: "The Eastern portico of the old building will certainly be taken down at no very distant day, and the front will be extended eastward."

No one can say right now how the argument will be resolved. Congress last year authorized the extension, but the wording of the law avoids any direct reference to the east front or the movement of its central portion outward. The ultimate decision will be up to the full commission, composed of the President of the Senate, the Speaker of the House, the minority leaders of the House and Senate and the Architect of the Capitol. A prominent force in the final decision will be the report of a special advisory committee announced last spring. This

report is not expected before May 1, 1957, although the advisors may have an informal report for the Commission in January. The Commission selected for its advisory panel architects Arthur Brown Jr., San Francisco; John F. Harbeson, Philadelphia; and Henry R. Shepley, Boston. Associate architects and engineers for the extension of the Capitol and other improvements include Roscoe DeWitt and Fred L. Hardison, Dallas; Alfred Easton Poor and Albert Homer Swanke, New York; and Jesse M. Shelton and Alan G. Stanford of Robert and Company, Atlanta.

Strictly aside from the extension proposal, the Capitol's custodians are worried about the east front for another reason - the condition of the Acquia Creek sandstone comprising the walls of the center portion. This buff-colored stone, from a quarry once owned by George Washington, is deteriorating badly, they claim, and requires immediate attention. Chunks of the material have on occasion fallen off the east wall and the capitol of one of the columns is held in place with wire. This front section of the structure has received some 30 coats of paint in the constant effort to keep its appearance blended with the exterior marble of the House and Senate

This paint, which is refurbished every four years in time for the inaugural ceremonies, is itself a concern for the architect's office. Mr. Stewart has ordered 12-in.-deep cores removed from the sandstone face to determine how deeply the paint oils have penetrated and what effect they have had on the material. These are now at the U. S. Bureau of Standards and a report on the findings is awaited.

As for the basic problem — the increase of governmental activity requiring more and more space — no one has denied that Congress seriously needs more elbow room. The Capitol's personnel increase has been more than 500 per cent since 1904. Mr. Stewart points out that the last major work which added space was done in 1882, involving the construction of the west terraces.

The architect's office now has \$17

million, \$5 million of it appropriated last year, with which to carry on preliminary studies. Architectural and engineering data are being accumulated and on-site surveys made as a prologue to the attack. As one of these preliminary surveys, bench marks are being placed throughout the building for the first time. Heretofore there were no reference points. Succeeding architects, says Mr. Stewart, will have these guides from which to work and will no longer have to reconstruct their data from torn and dim drawings and from extensive physical surveys.

In another study, ground core samples are being taken from a number of points throughout the Capitol Hill area. When plotted, these will give the first complete and accurate record of subsurface conditions, easing the future planning of additional structures which will become part of the Capitol complex.

It is even possible that the engineers may contrive to create additional space by burrowing down under the Capitol itself. There are some who think that extensive excavation with adequate shoring could provide excellent useable areas below the present basement level. The core samples will, of course, help decide this.

The treatment of the Capitol building itself is only part of an improvement involving the eventual expenditure of hundreds of millions of dollars. A third office building for the House is costing some \$64 million alone with an additional \$6 million for acquisition and clearing of the site. A new \$20.6 million Senate office structure is underway. Extensive remodeling of the two present House office buildings is planned at a probable cost of \$18.5 million. Bids already have been received for a modern cafeteria to grace the inner court of the new House office building. And a move is afoot to annex adjacent land to enlarge considerably the Capitol grounds. In this Mr. Stewart is looking into the far future with the conviction that a growing country means a growing government.

(More news on page 36)

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CANADA BUILDING BUSINESS SOARS WHILE PROFITS DROP

Competition, rising costs, and credit curbs are putting the pinch on Canada's construction industry despite a healthy increase in awards of construction contracts, latest statistical reports show.

The Bureau of Statistics forecasts that the increase in construction contracts granted this year will run as high as 19 per cent over last year's total. Already a new record of \$1.9 billion in contract awards has been set during the first seven months of this year. That is a 24 per cent increase over the same period in 1955 for contracts awarded.

In the face of accelerated construction activity, profits for the industry are dropping and company failures are rising. Despite the phenomenal total of work done in 1955—85.3 billion worth—the number of industry failures rose to 358, or 111 percent above the 1954 figures. That represents 5 percent of the estimated total of construction firms and, while few of them were major companies, a number were firms of long standing. There is every indication, evidenced by statistical reports, that the failure rate may be considerably higher this year.

One of the problems causing this good business-poor profits contradiction in Canada is intense competition. The Canadian Construction Association estimates that 25 per cent of all building companies have reported deficits over the past few years. In 1956 contractors are battling more intensely than ever to get jobs.

Much work is being taken on either at less than cost or so near the line that even slight variations in estimated time, labor and materials can cause a loss.

Costs Spiral Upward

In the background are spiraling wage rates and material prices. On the average, labor costs have climbed 7 per cent since 1954. During the same period, material prices have gone up about 10 per cent, though the rise in certain categories has been much steeper.

The tempo of increase is accelerating in 1956. So far this year, basic construction costs are 4 to 5 per cent higher, compared with hikes of 1 to 3 per cent in other recent years.

Union contracts signed in a dozen dif-

ferent building trades over the past few months represent an average increase of about 10 cents an hour, with another raise due next year.

Average material costs are running at an all-time high, with the Bureau of Statistics price index reading 127.5 for non-residential building items in June 1956 as against 121.2 in the same month in 1954, and 122.0 in June 1955. Residential building materials were 129.0 in June 1956 compared with 121.6 in the same month, 1954, and 124.3 in June 1955.

Credit Rates Rise

In August, the Bank of Canada raised the interest rate on its loans to chartered banks from 3 to $3\frac{1}{2}$ per cent, the fifth increase in the past 12 months. The effect will probably be to stiffen credit and make lending more selective, putting added burden on Canada's construction industry.

1955 HOUSE CONSTRUCTION TOTALS \$1.5 BILLION

Residential construction in Canada including land costs, involved expenditures amounting to over \$1.5 billion during 1955. This was reported recently in a review of mortgage lending in Canada by the Central Mortgage & Housing Corporation.

Of the \$1.5 billion total, 53.4 per cent was financed by mortgage loans, mainly from lending institutions. Another 30.4 per cent represented the equity of owners in the form of down payments on dwellings for home ownership, and the equity investment of rental entrepreneurs. In addition 12.7 per cent was provided by owners who financed the construction of their dwellings without recourse to mortgage financing. The Federal government provided 3.5 per cent of total expenditures, mainly for the construction of quarters for married members of the armed services.

THORNCLIFFE PARK DEVELOPMENT



LUXURY HOUSING PROJECT BEING BUILT AT TORONTO

Construction began recently on a multimillion dollar housing development at the site of the Thorncliffe Race Track near Toronto. To be called Thorncliffe Park, the development will consist of a number of high-rise, 15-story luxury apartment blocks which will house some 12,000 persons. A shopping and community center, schools and churches will complete the development.

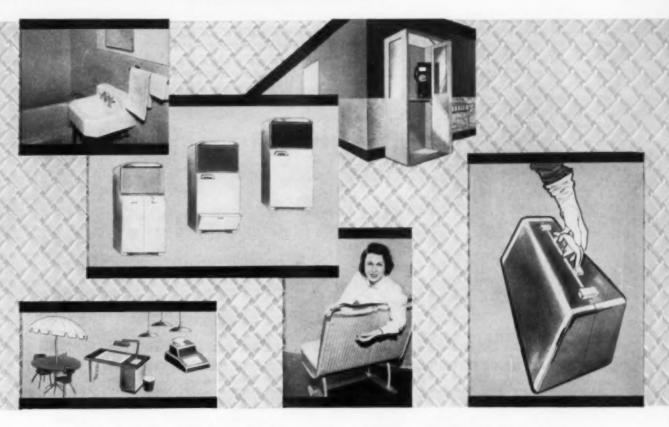
Situated on a 400-ft high plateau with an area of 388 acres, Thorncliffe

Park will be about ten minutes driving time from the heart of downtown Toronto. The site will be isolated from its surroundings by fully landscaped parkland which will include a sports center.

The new development is being built by F. H. McGraw of Ontario, Ltd., a subsidiary of the United States engineering and construction firm F. H. McGraw Co. Crang and Boake, Toronto, are associate architects along with F. H. McGraw.

(Continued on page 40)

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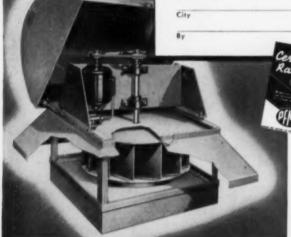
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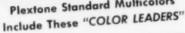
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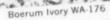


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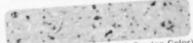


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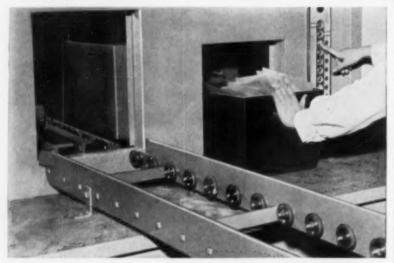
(Continued from page 36)

ONTARIO ARCHITECTS WANT MODULE, QUERY SHOWS

Ontario architects would like modular units to be made available, according to the results of a recent masonry survey.

A poll taken by a special committee of the Ontario Association of Architects showed 84 per cent of the architects responding were in favor of standard





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New 118-bed station hospital will be built at site of Camp Gagetown near Fredericton, N.B. The camp. which was begun three years ago, will ultimately cost about \$50 million and will include a town

brick and masonry units. Ninety-four per cent said existing brick sizes are not satisfactory.

The American module (8 in, by 224 in. by 4 in.) was favorable to 74 per cent of those answering the poll. Some 150 replies were received to the questionnaire on measurements circulated among Ontario architects by the committee on brick sizes.

Twenty-two per cent of the architects replying wanted to change directly to modular sizes. Others felt that such a change would occur within the near future. Over one half of the 84 per cent. replying in favor of modular brick said they would use the module in the majority of their work.

11 COMMUNITY PLANNING FELLOWSHIPS ANNOUNCED

Eleven fellowships for post-graduate study in community planning have been awarded for the year 1956-57.

The fellowships, which amount to \$1200 each, were given by the Central Mortgage & Housing Corporation. Announcement of the awards came from Robert Winters, Federal Public Works

Winners are Claude Langlois, Montreal; L. A. Sullivan, Valleyfield, Que.; W. C. Brideut, Ottawa; I. D. Macpherson, Toronto; L. F. Milne, Fredricton; H. D. Smith, Port Credit, Ont.; R. B. Truemner, Toronto; Edward Dolhun, Winnipeg; R. K. Jamieson, Montreal; P. D. McGovern, Vancouver; and J. R. Sharpe, Victoria.

Langlois and Sullivan will study at McGill University; Bridcut, Macpherson, Milne, Smith and Truemner at the

(Continued on page 44)

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at Proctor, Vermont. Interior valume 1,477,080 cubic feet . . . 19 rooms. Classrooms heated by convectors. National-U.S. Commercial Steel Boiler, oil fired, installed in school by Adams and Noe, Plumbing Contractor of Rutland, Vermont. School designed by I. W. Hersey Associates of Durham, N. H.





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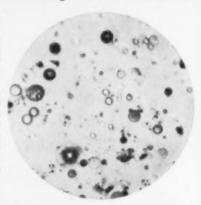
HEATING AND AIR CONDITIONING DIVISION

Why a Cement-and-Fly Ash Mix Makes a Superior Concrete

Eight Ways Better than Straight Cement Concrete Yet Usually Costs Less in Place

Architects and engineers will agree that finished concrete should be strong, tough, with smooth surfaces, clean lines and the ability to resist weather, cracking and the erosive effects of time and special conditions.

In modern practice the "straight cement" mix is rapidly giving way to mixes employing cement with various proportions of high grade Fly Ash. These produce a concrete of superior qualities, due to the Pozzolanic action of the Fly Ash, a finely divided mixture of silicates and aluminates shown, highly magnified, in the micro-photograph at right. Its particles are mostly spherical, of glassy nature.



"Ball bearing" shape and extreme fineness of Fly Ash particles make concrete more workable





Construction Jobs in Wide Variety Show the Improved Results of Using Cement-Fly Ash Concrete Mixes

Fly Ash has proved its ability to improve the concrete in every type of construction—in huge dams, subway and sewer projects, bridges, sky-scraper foundations and superstructures, pavements and other building, large and small. Architects and engineers from coast to coast are enthusiastic in their praise from actual experience with Fly Ash.

1. Compressive Strength

Many independent tests of concrete made with a percentage of Fly Ash show equal or greater 28-day strengths than shown by samples of straight cement concrete.

2. Workability

Due to the spherical particles of Fly Ash (see micro-view, left) plastic concrete made with it flows better, is more easily placed.

3. Finish, Appearance

A part Fly Ash mix fills forms better, results in smooth surfaces, sharp edges and fewer voids.

4. Less Penetration

Engineering tests under controlled conditions show definitely less penetration by water than for straight cement concrete.

5. Resists Sulfates

Subjection of test samples to action of sulfates and sulfaric acid shows markedly better resistance by cement-Fly Ash concrete.

6. Less Heat of Hydration

Controlled tests on concrete in place have shown 60° rise in temperature for Fly Ash concrete, 84° for that of straight cement.

7. Less Harm from Freezing

Tests of samples of air-entrained concrete made with and without Fly Ash show much less drop in elasticity, during 500 cycles of freezing and thawing, for the Fly Ash lots.

8. Less Expansion

Tests of samples made with known reactive sand show much less expansion, due to cement-aggregate reaction, where Fly Ash is used in the mix.

And Usually, All the Above at a Saving in Cost!

The Facts Are Well Established—Send for Full Information

FLY ASH Improves

Compressive Strength Workability, Finish Appearance

Increases Resistance to

Penetration by Water Sulfuric Acid, Sulfates

Reduces

Cost of Concreting Heat of Hydration Harm from Freezing Harmful Expansion That Fly Ash improves concrete, reduces the bad effects of water penetration, of sulfates, of heat of hydration, freezing, expansion—all without loss of 28-day strength—is amply proved by many independent engineering tests. The results are available; why not send for them? It costs nothing to get the facts

on Fly Ash; it might mean a great deal in the success of your practice. Each of the following companishas staff engineers to assist in writing speciacations for particular projects and to furnish technical help and data on the use of their Fly Ash of proven performance. Your letter or call will be welcomed.

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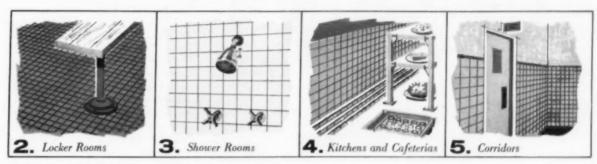
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Two free booklets. "Tile for Schools and Hospitals", and "Catalog of Tile Products", will be helpful in your planning. Won't you write for them today?

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THE RECORD REPORTS

(Continued from page 40)

University of Toronto; Dolhun and Jamieson will study community planning at the University of Manitoba; and McGovern and Sharpe will do advanced study in the field at the University of British Columbia.



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"HOUSE OF 1956" DESIGNED FOR CANADIAN MAGAZINE

The Canadian Home Journal's "House of '56" was opened to inspection by the public recently.

Designed by Fox and Stone, Toronto architects, the house is located at 101 Banbury Road, Don Mills, Ontario.

Plan for the house was based on the results of a survey by the *Journal* which queried a number of architects, builders, and typical families as to "what people really want in a home."

Requests for individual privacy; bedrooms "large enough to hold more than just a bed and chest;" a fireplace; room for such hobbies as music, photography, and sewing; "plenty of closets and storage space," and room for future electrical appliances, were incorporated into the house plan by the architects.

RECORD SET FOR CANADIAN HOUSING UNITS COMPLETED

A record 48,012 housing units were completed in Canada during the first six months of 1956, the Bureau of Statistics reports. The number of new units started — 59,645 — also represents an all-time high for a half year.

A 17 per cent drop in unit starts under the National Housing Act had been registered during the first quarter of 1956, as compared with the same period last year. Central Mortgage & Housing Corporation blamed the decline, which took place in Toronto and Vancouver, on lack of serviced land rather than on shortage of mortgage money.

PROF. LASSERRE COMPLETES TOUR OF EUROPEAN CITIES

Prof. Fred Lasserre, director of the School of Architecture, University of British Columbia, has just completed a tour of 52 cities in 12 European countries.

While on the tour, Prof. Lasserre (Continued on page '66)

THE LIGHTING SYSTEM THAT

goes together on the floor

and saves 50% on Installation costs

The new Gibson ORTHO Fixtures mount on a special channel called the UNI-RACE. In the photo above, the telescoping sections of the UNI-RACE are being assembled on the floor in a matter of minutes. The receptacles which come with each 4-foot section are connected as shown in the inset. The light but rigid UNI-RACE in 24' to 48' lengths is easily lifted and hung directly on joists, beams or stems. The fixtures simply snap into place on the UNI-RACE which holds them in perfect alignment.

An easier, faster and far better job! Is it any wonder that contractors report savings of more than 50% in labor and materials on Gibson Ortho Installations?

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THE RECORD REPORTS

NEWS FROM CANADA

(Continued from page 44)

gave 13 lectures in England and Ireland, and had interviews with the heads of 20 European schools of architecture.

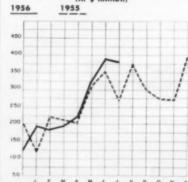
The trip was sponsored by the British Columbia Lumber Manufacturers' Association, with an additional grant from the University of B. C.

NEWS NOTES

Husband, Wallace & Baldwin is the new name for the architectural firm of Husband & Wallace, located at 30 Hunter St. West, Hamilton . . . William Saccoccio, Architect, has opened an office for the practice of architecture at 455 Spadina Ave., Toronto . . . J. H. Acland has been appointed associate professor in the School of Architecture at the University of Toronto ... G. A. P. Carrothers will be assistant professor in town and regional planning at the University of B. C. . . . E. J. Watkins and Geoffrey Massey have formed a partnership and opened offices for the practice of architecture at 1155 West Pender St., Vancouver . . . Jackson, Ypes & Associates, architects and engineers, have moved to 24 Northtown Shopping Plaza, 5385 Yonge St., Willowdale, Ont.

New Addresses: Vancouver—Architects Collaborative of British Columbia (composed of James Y. Johnstone, Arthur S. Read, F. W. Scott and Harald Weinreich), 1073 West Broadway; R. W. Wilding, Architect, 1929 West Broadway; Calgary—Albert Dale, Architect, 1218 Center St., North; Port Credit—John L. McFarland, Architect, 100 Dixie Plaza; Toronto—Fabbro & Towend, Architects, Sudbury, 33 Bloor St. East; Venchiarutti & Venchiarutti, 194 Wilson Ave.

Contracts Awarded: Comparative Figures*
(in \$ million)



*Compiled by the editor and staff of The Building Reportor, from information collected by MacLoan Building Reports

(More news on page 48)



San Francisco where the management word for elevators is OTIS

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U. S. HOLDS COMPETITION FOR CORREGIDOR MEMORIAL

More than 50 of the nation's architects are competing for the privilege of designing a \$6 million Pacific War Memorial to be placed on the Island of Corregidor in Manila Bay, the Philip-

The competition is being conducted by a special Corregidor-Bataan Memo-

rial Commission established by Congress in 1953. Headed by Hon. Emmet O'Neal, former ambassador to the Philippines, this group did not become active until a few months ago when it launched a general two-phase competition among all members of the American Institute of Architects. From the many brochures which poured in, 52 were selected as qualifying the architects for the first stage of the contest. This represented 94 per cent of all replies to the initial invitation.

The program as outlined by the Commission, working closely with A.I.A.'s competitions committee, suggested a commemorative triad consisting of a monument "to those who fought and died defending our freedom," a school "where these precepts could be studied and taught," and "a forum from which they could be proclaimed to the world." Provision would be made for archives and a library, probably in connection with the school.

Congress has appropriated only a small sum to launch the competition and carry through details, but construction funds are expected from a national contribution which will be conducted later. The Commission aspires to a \$6 million effort, making this a memorial to all those who fought and died under the American flag in the Pacific in World War II - an estimated 100,000. It will reflect the hemispheric scope of the war in the Pacific from 1941 to 1945; a war which engaged more than three million American soldiers at peak strength.

From the 50-odd submissions due by November 15, a jury of three architects, a sculptor and a builder will select five for the final phase of the contest. An additional five will be selected by the Commission itself, after consultation with its architectural advisor, John F. Harbeson of Philadelphia. The five-man jary then will be extended - probably to nine - for the final judging to select the single choice.

The Commission's jury for the initial judging is composed of Pietro Belluschi, Massichusetts Institute of Technology school of architecture and planning; Frederick V. Murphy, Murphy & Locraft, Washington, D. C., and William J. H. Hough, of the firm Harbeson, Hough, Livingston & Larson, Philadelphia, all architects, sculptor Lee Lawrie, Easton, Maryland, and builder Charles H. Tomkins, Washington, D. C.

A \$10,000 fee awaits the winner of the competition. Each of the named contestants in the first phase receives a \$500 fee. Each of the nine architects in the final stage who are eliminated will receive \$1200 in fees.





ARCHITECTURAL RECORD

WESTERN SECTION

Western Editor:

ELISABETH KENDALL THOMPSON

2877 Shasta Rd., Berkeley 8, Calif.

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BETTER DESIGN FOR OUR PUBLIC BUILDINGS

What Do You Think?

Comments and discussion of this subject are welcome on this page. Write to the Editor, Western Section, 2877 Shasta Road, Berkeley 8, Calif.

Letter to the Editor
A Definition
of Architecture

Editor: Misunderstandings in legal processes are to be avoided if possible, but not to the extent that integrity is lost through definition. It was for this reason that the term "intent" entered into the reasoning of legal processes.

I have adjusted my definition of architectural practice thus: "The practice of architecture is that coordinated employment of the arts, sciences and practical business procedures which successfully transforms the desires and requirements of a given client into a tangible structure by means of an orderly, professional process of client contact, problem analysis, design, cost estimating, preparation of drawings, specifications and agreements, supervision of construction and contract terminations."

A comparison between the legal definition of architecture and the type of practice currently operating under that definition, in each of the 48 states, would be an extremely interesting piece of research.

> Thomas A. Balzhiser, President, Southwest Oregon Chapter, A.I.A. Eugene, Oregon

In three of the west's largest cities funds for public buildings have been voted by the citizens, and in several others bond issues are on the November ballot. In due time buildings will be rising, monuments to the people's willingness to finance generously an obvious need. But what kind of buildings will they get for their money?

Will these new buildings be of the quality of Stockholm's Town Hall, for instance, or of Renaissance Italy's civic buildings? Will they be buildings whose future existence will be assured, for which proud care and maintenance is a happily borne civic responsibility, buildings which will endure because they are beautiful, true, inspired?

Or will they, like too many of our public buildings, be objects of civic (if not architectural) pride only because of their newness, their ostentation, their size? And, as with these, will the civic pride last only until the newness has worn off and fashion has disclosed the once-grand structure as a worn-out cliché?

What a shame that the West can have achieved recognition for its residential work and not yet have picked up the challenge of its public buildings! Why should this be? What stimulus is needed to produce better design in our civic building, the name-pieces of our cities?

There is one means which has been so little used in this country that it should not be written off without trial. That is the competition for design of public buildings. For all the shortcomings that competitions inevitably have, they are nevertheless a valid method of selecting a qualified person to whom to entrust public work. True, the Tribune Tower competition netted a great design not for first, but for second, place, and the real work of architecture was never built. And true, too, it should be possible to judge an architect by his completed work.

To the first objection, an answer is the selection of the best possible jury whose members have shown by their own achievements that their predilection is for the finest and best; there are such men and women available for jury service. To the second objection, an answer is that it is difficult to compare the completed work of one architect with that of another if it is not within reasonable distance for visiting by a selection committee; or if full information on program and solution is not available; or if there is great discrepancy in building type—for the layman seldom recognizes that the architect is a specialist in building design, not building type.

The competition—whether open or invitational—has one further advantage which certainly should not be overlooked. That is that the burden for selection of an "advanced" design, secretly desired, perhaps, by timid officials afraid of criticism from conservative citizens, rests with the jury; the officials did not choose the winner. This is an ironic commentary on our times, that taste and strength of action are not often companions.

At its last national convention, the A.I.A. approved a resolution that architectural competitions be suggested, whenever appropriate, to Federal, State and Municipal agencies as the method of selection of the architect for a proposed building.

In a recent invitational competition for a large building, the non-winners, each of whom was properly compensated for time spent on competition drawings, spoke of the competition as "a stimulating experience." Their time had been paid for, they had a chance to stretch their minds in an unaccustomed way, the experience had in itself been out of the ordinary. It was like the illusory "return to school now that I know what I want to do."

Perhaps it is a way to better civic buildings. Surely it is something to think about and discuss.

E. K. T.



TODAY an Introduction

Traveling Exhibition of California Landscape Architects' Work Has San Francisco Preview

In the heyday of the Renaissance, there were no separate professions of architecture engineering and landscape architecture; an architect was all three. But because he was no botanist, specialists in this field gradually supplanted him, and "landscape gardening" became a separate calling. Not altogether divorced from architecture, however: it was Paxton, the landscape gardener, who designed the Crystal Palace.

Today landscape architecture is a profession in its own right, working with the architect to do far more than its one-time job of providing a pleasant setting for a building or laying out vast estates on the grand scale. The landscape architect today complements the useful space inside a building with useful space outside — useful for a variety of purposes but always useful to human beings, designed to a scale suited to children as well as to adults.

This is clearly demonstrated in the traveling exhibition of the work of 37 California landscape architects prepared and presented by the California Redwood Association, in which individual credits have been eliminated to emphasize the exhibition's theme. Besides the two-year tour of the full sized exhibition panels, a "desk-top" copy of all panels will tour interested schools and colleges.







. . . for Recreation

1, 2. Kruzi Playground, Alameda, Calif.: Redwood fence with a single entrance—to minimize overseeing—encloses a public playground in a crowded residential area. Eckbo, Royston and Williams, landscape architects

3. Swimming pool enclosure Pool is fenced off from patio as protection for children; entrance is through sliding sections of fence and down curving steps between circular planting beds. John Carmack, landscape architect

. . . for Leisure

- 4 Residence Terrace provides for dining as well as lounging under trees, with furnishings as much a part of design as planting areas and plants. Eckbo, Royston & Williams, landscape architects
- 5 Residence Deck extends from living area, doubling usable leisure space by easy house-to-garden transition. Lawrence Halprin, landscape architect
- 6 Sorority House, Berkeley Deck opens off living room, can be used for lounging, dancing, games, plant boxes move on casters. Ralph Jones, landscape architect



Micrley Bos











Foothill Farms, Sacramento This tract (7) includes professional landscaping advice in the purchase price of each house. Owners choose landscape plan from brochure prepared by landscape architect Douglas Baylis of San Francisco, develop their own outdoor areas individually (8, 9), tract developer augments with street planting and park

LANDSCAPE ARCHITECTURE TODAY

. . . for Living and Working: Residential and Industrial Tracts







Industrial tract, Menlo Park, Calif Landscape design integrated open areas around three closely situated buildings, providing park-like environment along public side of buildings (10) and outdoor eating space under trees for employes (11) Redwood and wire mesh fence (12) separates two adjacent plants. Geraldine Knight Scott, landscape architect



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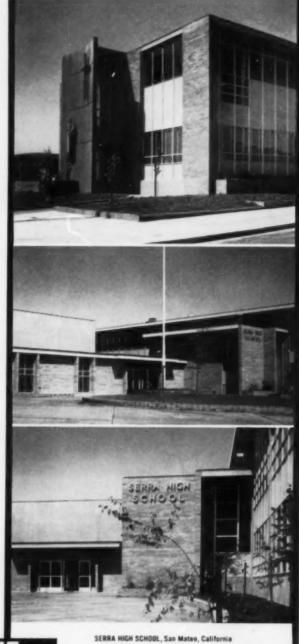
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WESTERN BUILDINGS IN THE NEWS

Form Follows Structural Theory



Thin Shell Vaults

Thin shell barrel vaults will roof the gymnasium and auditorium units of the new high school at Pendleton, Oregon. Prestressed, precast, reinforced concrete framing will be used on other units. Plan is modified campus type with courts separating units. Culler, Gale, Martell & Norrie, of Spokane, Wash., are architects and engineer.



Folded Plate Roof

Colorado Springs' new 16-lane bowling alley features a sawtooth roof of folded plate concrete. Now under construction, building is first unit of recreational center for Colorado Springs Aquatic Center Pool will be built later. Toll & Milan of Denver are architects.



Geodesic Flight Cage

Wild birds of the Pacific flightways will find lodging for a brief sojourn in the aluminum framed flight cage now being erected at the Oakland, Calif., Lake Merritt game refuge. Directly inspired by Buckminster Fuller's Bay Area visit last spring and enthusiastically endorsed by city officials, cage was designed by five University of California students—William Underhill, Dick Schubert, Gordon Tully, Marshall Malik and Dan Peterson—who worked under Fuller during his residence at the University. Don Richter, Kaiser Aluminum & Chemical Corporation design engineer, is acting as consultant



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features

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RESEARCH HOUSE 1956

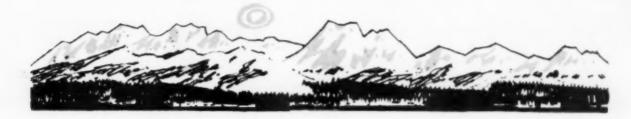
at Poetuguese Bend, on the Palos Verdes Peninsula, Calif.

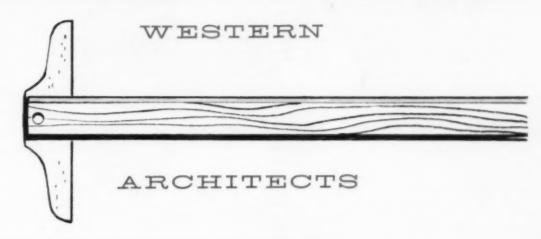


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Controversial is the word for the big building projects which currently engage the attention of Seattleites — a second bridge across Lake Washington, plans for a 1959 World's Fair and a site for a civic center that may determine whether or not the fair is held.

Of the three, the bridge has made the headlines most recently, particularly when the Chicago engineering firm of DeLeuw. Cather & Company announced its recommendation of a route for it. The route selected parallels the existing Lake Washington floating bridge between Bellevue and Seattle over Mercer Island. Its virtues, say the engineers, are obvious: it can connect directly with the proposed Tacoma-Everett Tollway and would feed vehicles into the city traffic pattern with a minimum of congestion. Also, the sections east of the lake are growing rapidly and by 1957 will have increased by 200 per cent. By that time a second bridge would just be paid off and a third bridge would become necessary, they predict.

Furthermore, they say that this route is the "only one that would provide the 'safety cushion' that investment bankers require" for issuance of revenue bonds, the proposed method of financing the bridge. The present lake bridge is toll free; if a second bridge were to be built, tolls would be required on it to prevent its becoming an obligation to the city. This would create an unfeasible situation since the State Attorney General has stated that there exists "no legislative act which specifically authorizes reimposition of tolls on the present bridge."

The prospect of paying tolls is not a delight to residents of Mercer Island and Bellevue, many of whom work in Seattle. Even the proposal to make each bridge one-way, with a toll on only one of them, does not please them. Many of them oppose the route as well as the tolls, urging that the bridge be built between Evergreen Point and the Montlake section of Seattle, a route that would thrust bridge traffic into the heart of a residential district and would push a freeway right through the Arboretum, a park.

The World's Fair proposal and the civic center site are closely related, says the Fair commission chairman, Edward E. Carlson, because if Seattle residents do not vote to support the bond issue for the civic center, the Legislature

"will not look with favor on providing funds for a World's Fair." A bond issue amounting to \$7,500,000 has been recommended by the Citizens' Civic Center Advisory Committee, a City Council sponsored group, for inclusion on the November ballot. Part of this money would go for acquiring a 20-acre site adjacent to the 28-acre site already owned by the city.

The civic center site is near the present Civic Auditorium and lies between Roy, Mercer, Denny Way and Broad Streets. If the bond issue is approved, the site could be used for the Fair, according to William C. Goodloe, Advisory Committee member and member of the Legislature.

DENVER:

No Football Stadium

Denver's hopes of getting the Air Force Academy's football stadium were dashed with the announcement last summer by Air Force secretary Donald A. Quarles that the stadium be built in Colorado Springs near the Academy. As consolation, however, Denver can supply most of the spectators at the Academy's games.

Skidmore, Owings & Merrill, architects for the Academy, have designed the 45,000-seat stadium.

LOS ANGELES:

To Remember the Pioneers

In the maelstrom of its traffic, in the kaleidoscope of light and color and in the highly developed sophistication that make up Los Angeles it is difficult to remember that there were ever such people in that neighborhood as pioneers or that Los Angeles was ever a pueblo surrounded by ranches and in need of protection by the United States Army. One hundred years ago not even the wildest prophet would have predicted that Los Angeles would be what it is today.

Seven years ago a group of civic minded women urged that the city build a memorial to its pioneers which would recall those early settlers, the ranchers and soldiers so easily forgotten today. Last July Fourth the memorial they suggested was dedicated on the site of Fort Moore where the first American flag was raised July 4, 1847.

The memorial is a simple one, dramatically emphasizing a problem which plagued the early settlers and still plagues their descendants; water. It consists of a wall almost 400 ft long and 45 ft high, most of it unadorned. A waterfall, 85 ft wide, pours over one section of it, and a large sculpture commemorates the first flag raising in Southern California.

The design for the memorial was chosen in an open competition, the first in many years to be held for a civic project in Los Angeles. Winners were Los Angeles architects Kazumi Adachi and Dike Nagano. The jury which selected them included architects Gardner Dailey, San Francisco, John Wellborn Root, Chicago, and Eero Saarinen, Cranbrook, Mich.; sculptor Albert Stewart, Claremont, Calif.; and Neil Petree, Los Angeles civic leader.

How High Shall the Buildings Be?

The height-limit provision in the Los Angeles City Charter sets the height of Los Angeles buildings at 13 stories, a sufficient height for a city which seemed to be able to spread in all directions almost illimitably. But however much it can spread, there is a limit to how much it should spread: spreading makes problems as much as crowding does.

For some time Los Angeles has been considering the possibility of raising the height limit, an idea that has gained support from a diversity of groups, including the Los Angeles County Planning Board, the City Planning Commission, the Chamber of Commerce and related groups, and the Building Owners and Managers Association.

In November residents of the city will have a chance to register their preference and accordingly Los Angeles either will build taller buildings or it will continue to build no higher than 13

The big problem in raising the height limit is not the earthquake question as many suppose, but parking: under the proposed amendment, the same requirement of one parking space for each 1000 sq ft of floor area would remain in effect. The amendment also requires that the "total area contained in all buildings on any one building site shall not exceed 13 times the buildable area of the site," a requirement which, according to City Planning Director John E. Roberts, may "contribute to tall, spirallike buildings which can permit more light and air in the adjacent street space and eliminate compact visual barriers that now result from groupings of lower, solid-block type buildings."

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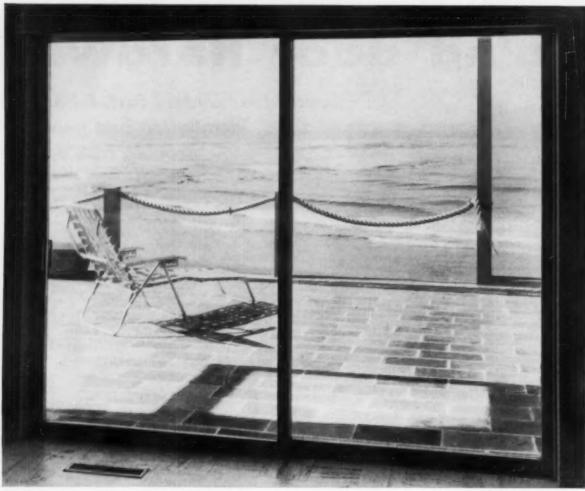
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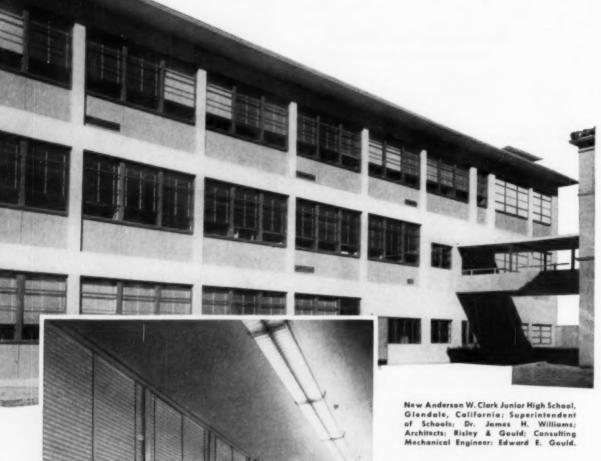
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SCIENCE AIDS

THE BUILDING FIELD

Desalted Sea Water Nears Reality

Two new methods of obtaining fresh water from salt water will be in operation before the end of the year, one using the compression distillation principle, the other depending on solar distillation. If these are successful - and they must be economically feasible to be thatthe long-sought conversion of plentiful sea water into an abundance of muchneeded fresh water will not be long

For such desert regions as the Southwest, this would offer the possibility of development from aridity to productivity, from uninhabitability to living conditions similar to those of fast-growing Phoenix and Tucson.

Fresh water distilled from sea water is nothing new, of course. But the usual process has been too costly for application on a large scale. Recently, however, its use in industry has been proven justifiable by Pacific Gas & Electric's Morro Bay, Calif., steam-electric plant. But application to agriculture or as a municipal supply has so far been too expensive for practical consideration.

Congress appropriated \$400,000 in 1956 for research on this problem, and in 1957 will provide \$550,000 more. These funds are a part of the 14-year \$10,000,-000 research program. The Saline Water Office, authorized in 1952, has also been working with the Atomic Energy Commission on possible demineralization of salt water through use of heat produced by atomic processes.

What a cheap method of desalting water could mean to the economy of the West's arid inland areas is staggering to the imagination. The architectural potential is even greater.

The Sun and You

Whether the sun or the atom is to be man's principal source of power only time and the scientists and engineers can show. Meanwhile, development of solar energy sources proceeds at a slower pace than atomic energy, mainly because less money has been available for research. The potential is enormous, whether in powering aeronautical ships or in heating and cooling a house.

Scientists know how to trap the sun's heat and how to derive power directly from the sun but doing it on a scale large enough to be economical is still a

(Continued on page 48-22)

48-20

orcelain ENAMEL for the **Curtain Walls** building Wainscoting industry **Canopy Facia** CONTRA COSTA COUNTY Marquee Facia ADMINISTRATION BUILDING ond, California **Building Facia** Architect: Donald L. Hurdison, A. I. A. Contractor: Stalte, Inc. Louvers **Spandrels** Columns **Mullion Covers Parapet Caps** Coping **Water Table** Bulkheads CORTRA COSTA COUNTY **Tower Facing** Letters

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SCIENCE AIDS

THE BUILDING FIELD

(Continued from page 48-20)

problem. Designing buildings which depend on the sun for heating and cooling is still far from a common procedure but one of the few such is now under construction in Denver. James M. Hunter of Boulder, Colo., is the architect for a house for one of the best known solar researchers, Dr. George M. Löf.

What the sun can provide in the way of energy - important as that could be to us - probably is but a fraction of what its indirect effects could be once its characteristics are better known. To find out more about these, high altitude laboratories have been installed at several locations, including New Mexico and Colorado.

In New Mexico's Sacramento Mountains, the U.S. Air Force is building a large solar furnace (a system of mirrors for focussing sun rays on a single spot) with which it hopes to obtain radiation temperature of some 7000 to 8000 degrees F. over a large area. In Colorado, a \$150,000, four-year study is under way to learn how the sun effects the changes in the earth's upper atmosphere which influence weather conditions. Such studies could substantially help in longrange weather predictions for large areas - information commercial firms such as oil companies would like to have so as to gauge winter heating oil sales.

Materials

THE BOND between brick and mortar a building method thousands of years old - is being studied with the most up-to-date electronic equipment at U.C.L.A. in an effort to find out what makes it take place. Small tremors, as sent through the test walls with an ultrasonic device, are reflected to and recorded on an oscilloscope. Characteristics will be studied from patterns shown on this device. Another phase of the study involves use of plastic models of brick structures to determine how masonry fails under earthquake conditions. Full scale brick walls are also being used to learn the nature of stresses which act parallel to the direction in which the brick is laid.

Experiments on California woods will be possible with the dry kiln now being built at the University of California's Forest Products Laboratory in Richmond, Calif. The kiln, of the internal fan, cross circulation type, will hold 6000 board feet of lumber in its drying chamber. Optimum air speeds, steam consumption during drying, and electrical energy expended in operating the kiln's motors will be studied with it. A saw mill already built will make possible complete processing of the woods.

DUCTILE CERAMICS — which would bend without breaking - are the object of research now going on at the University of California at Berkeley Division of Mineral Technology

Although the study is still in its preliminary stage, it has already shown that some ionic solids (hard, brittle materials) can be ductile under certain conditions. When potassium chloride crystals, the ionic substance used in these experiments, were immersed in water, they exhibited ductility within three seconds and obtained maximum effect within two minutes. However the effect lasted only 10 minutes when the material was transferred to a saturated solution.

Much more study is needed, say researchers, in order to establish the basic principles which govern the ductility of materials - but a way has been shown.



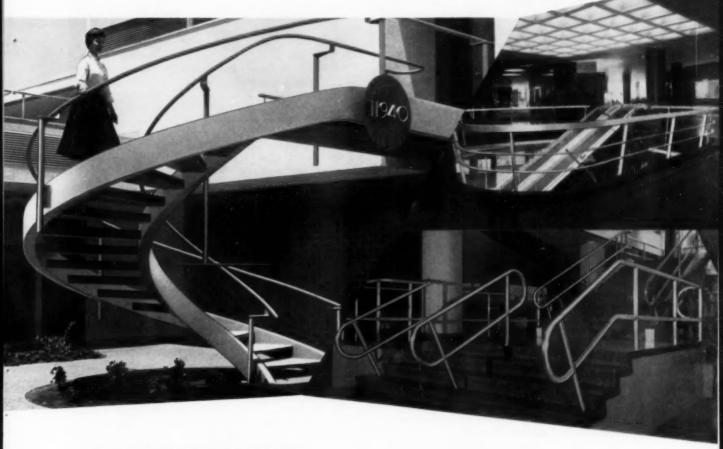
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WASTE SPACE

A Slot Machine Called Design

The list of things that can be got from a slot machine is apparently endless. The candy, soda pop, gum, sandwiches, coffee, soup, cigars, cigarettes - no use listing all the familiar items - and services, for this is the age of the slot machine shoe shine, the rent-a-shaver, even the dollar-bill-changer. But one thing at any rate just can't go slot machine: building design, though some people apparently think it already has. My classmate, Tom Elston of Carmel, once had a client who, when he heard that it would take a few weeks to make the working drawings from which his project would be built, disgustedly asked, "Don't you have a blueprint machine?" If building design ever does go slot machine, it's good-bye to that best stimulant of all, the client, whose worries and joys, wants and budgets, keep architecture from ever being a completely repetitive proposition. But don't think this danger doesn't exist, even without slot machines for design; just look around town - any town.

In Every Life Some Rain Must Fall

A. B. Swank, Jr., a Dallas architect, writes to remind us of the story Bruce Goff—a former Californian now in Tulsa, Okla.—tells: "A potential client had seen a story in Life magazine on Frank Lloyd Wright's house in Racine for the Johnsons and had heard that Goff was akin in spirit to Wright. She said: 'Mr. Goff, I was disturbed by the note that the roof had leaked during Mr. Johnson's first dinner party.' Goff replied: 'Madam, there are many houses whose roofs don't leak but they will never be pictured in Life magazine.' "

Errors and Omissions

The instruments of architectural service are not the only things subject to human erring and worthy of divine forgiveness. The newspapers have their grievous times, too. A headline in the Portland *Oregonian* indicates an intriguing state of affairs at the University of Oregon which could imply all sorts of changes in the architectural philosophy of the future. Here's what it said:

"Campus Plan
To Get Study
Committee to Eye Deferred Living"
Draw your own conclusions!

I'm Just The Man Who Wrote the Play

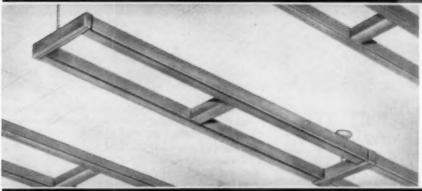
Architects often feel like forgotten men—and sometimes they are. But they're not the only ones who are forgotten in the moment which should be theirs for glory. Playwrights have the same troubles. Robert Anderson, author of this season's "Tea and Sympathy," also wrote the film version and consequently had a natural desire to see how it had turned out on celluloid. When he asked to preview it, the assistant to the head man with whom he had worked during the lengthy period of script writing replied—after an ominous pause, and with that lofty air which only assistants in the movie world can attain—"May I ask what your connection with the picture is?"

So, architect, if you feel forgotten, neglected, unknown, less important than your newest draftsman, you're not alone. All that glitters is not fame.

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PROFESSIONAL NEWS

Western Mountain Region Convention

Reflecting the broad scope of the architect's interest, the program for the annual conference of the Western Mountain region, scheduled for October 18-20 at Salt Lake City, Utah, will feature talks on the development of regional resources, atomic power, architectural design and city planning. Among the speakers are architects Paul Thiry of Seattle, John Lyon Reid of San Francisco, and Philip Will of Chicago; structural engineer Edgardo Contini of Los Angeles; E. O. Larson, Regional Director, U.S. Bureau of Reclamation, who will speak on the Colorado River Project; George Gadsby, president, Utah Power and Light Company, atomic power; and Dr. Sterling McMurrin, dean, University College, University of Utah, on "People and Architecture.

Of special interest will be the concurrent meeting of the A.I.A.'s national committee on education of which James M. Hunter, Boulder, Colo., is chairman. Committee members will participate in a panel discussion on architectural education and the architect-in-training program as a part of the

Roger Bailey, head of the department of architecture, University of Utah, is program chairman for the conference, Lloyd Snedaker is convention chairman, and W. Rowe Smith is president of the host chapter.

Structural Engineers

Structural engineers from Oregon, Washington and California will hear prognoses on engineering design techniques at their first joint conference to be held October 11-13 at Reno, Nevada, under the auspices of the Structural Engineers Association of California. Curtain wall construction, thin shell concrete, prestressed concrete, plastic laminates and sandwich construction are among topics to be discussed by speakers from various parts of the country. Also scheduled are talks on design for blast protection and the future of engineering manpower, C. M. Herd is president of SEAOC; Jack Barrish is general chairman for the convention.

Elections and Appointments

Gilbert Wojahn is the nev president of the Southwest Washington chapter, A.I.A. He succeeds Nelson Morrison. Other officers are Gordon Johnston, first vice president: Robert Olson, second vice president; Henry Kruize, Jr., secretary and Dana Anderson, treasurer.

George Whittier, Portland, Ore., architect, has been appointed by Governor Elmo Smith to the Oregon State Board of Architectural Examiners. He succeeds John K. Dukehart of Portland, whose five-year term has expired.

E. A. deWolf, Stockton, Calif., was recently elected president of the Central Valley Chapter, A.I.A. Whitson Cox is vice president, Joe Jozen, secretary, and Albert M. Dreyfuss, treasurer. The latter three are from Sacramento. Jack Whipple, Stockton, and Doyt Early, Sacramento, were elected directors.

New Firms, New Addresses

Higgins & Root, San Jose architects, recently celebrated the 20th anniversary of the firm and were honored by their office associates at a smorgasbord dinner.

Starks & Jozens, architectural firm of Sacramento, Calif., announce the association of Daniel J. Nacht, formerly of the University of Illinois faculty and for many years connected with the architectural firm of Skidmore, Owings & Merrill. The firm, which will now be known as Starks, Jozens & Nacht, has its offices at 416 Native Sons Building, Sacramento.

CALENDAR OF WESTERN EVENTS

- · October 10-14: California Council of Architects, annual convention, Yosemite National Park
- October 11-12-13: Structural Engineers Association of California, annual convention, Reno, Nevada
- October 18-19-20: Western Mountain Region A.I.A. Convention, Salt Lake City, Utah
- October 22-November 2: National Resources Conference, conducted by Industrial College of the Armed Forces, Tucson, Ariz. and Butte, Mont.
- · October 29-31: Energy Resources Conference, sponsored by Natural Resources Committee of Denver Chamber of Commerce, Denver, Colo.
- · October 31-November 1: "Resources for Industrial Expansion," 1956 Western Area Development Conference, Westward Ho Hotel, Phoenix, Ariz.
- October 31-November 2: Texas District, A.I.A. Regional Conference, Corpus Christi, Tex.
- · November 8-30: "The Blue Four" (Klee, Feininger, Kandinski and Jawelenski), Portland Art Museum, Portland, Ore.
- November 16: Opening, Oriental Wing, Denver Art Museum
- · November 16-December 16: "Design in Scandinavia." Portland Art Museum, Portland, Ore.

WESTERN SECTION

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Catalogs of the firms listed below are available in the 1956 Sweet's Catalog Files as follows:

- Architectural File (green) Industrial Construction File (blue) Light Construction File (vellow)

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	Basalt Rock Co., Inc.	48-6
a-ic	Baxter, J. H. & Co	48-15
	Bayer, A. J., Co.	48 - 23
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	Kaiser Gypsum Company, Inc.	48-11
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88	Minnesota Mining and Mfg. Co.	48-17
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	Pacific Tel. & Tel. Co	48-22
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	Thompson, E. A. Co., Inc.	48 - 24

Western advertising offices: LOS ANGELES, Bob Wettatein, 672 S. Lufayette Park PL: PORTLAND, Bob Wettstein, 921 S. W. Washington St.; SAN FRANCISCO, Bob Wettstein, Howard Bldg., 209 Post St.

Why are factory-built cabinets best for schools?



HOMEMAKING foods laboratory and sewing room at South High School in Minneapolis, Minnesota. This installation handled by Haldeman-Homme, Inc., St. Paul 14, Minn.





FOR —Foods Laboratory
Laundry Area
Arts & Crafts
Clothing Laboratory
Sewing Laboratory
Grooming Area
Home Management Area
Child Care Area
General Storage Areas

To be sure, cabinets can sometimes be built on the job for lower initial cost. But school records prove that they are far more expensive in the long run.

Schools that install Mutschler factorybuilt cabinetwork report it is so well built, so durable they consider it as nondepreciative as the building itself. Onthe-job cabinetwork just cannot measure up to this kind of quality.

From trees felled on company-owned tracts to installed cabinetwork, Mutschler factory-built cabinets are under the careful supervision of skilled craftsmen. And more than a million dollars worth of specialized machinery is used in their fabrication. No contractor or carpenter has the time, nor the equipment, to build homemaking cabinets that give service like those made by Mutschler.

Then there is the matter of finishes. All Mutschler natural-grain cabinetwork is finished with DuPont Dulux... which cures by chemical reaction in the presence of heat and a chemical catalyst. It is extremely scratch-resistant, and is unharmed by nearly any solvent or solution. This kind of finish cannot be properly applied without factory equipment.

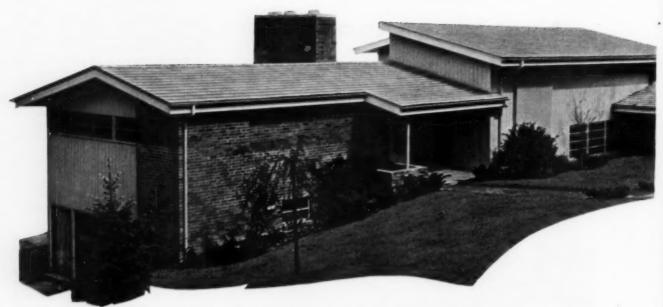
Also, cabinetwork should be planned for most efficient use. Mutschler sales engineers are specialists in the planning and equipping of school homemaking and foods departments, arts and crafts rooms, and storage areas. This planning help is available at no extra cost when you specify Mutschler.

Such a great number of the nation's schools have found they get more for their money with Mutschler. Why not investigate comparative costs and services before you build or remodel?

SEND COUPON FOR INFORMATION

If you have a building or remodeling project, call in a Mutschler homemaking department specialist. Let him prove to your satisfaction that you get more for your money with Mutschler!

	Dept. 1076-I, Nappanee, Indiana
	send further particulars about your school home g services and the name of our nearest Mutschle ltant.
NAME	
FIRM	
	55
ADDRE	**



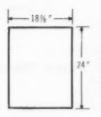
FIRE-CHEX 400... the new giant individual shingle for today's low,



Exclusive asbestos-plastic construction, weight 400 lbs. per square. Exposure 18% " $\times 10\%$ " —nearly 4 times the color exposure of ordinary shingles. The only shingle with Underwriters' "Class A" fire safety rating on roofs down to 1" pitch. Color-styled in four exclusive Shadow Blends ("Cloud Gray" on home, "Sun Gold" illustrated).



wide-sweeping roofs ... by Carey ... Lockland, Cincinnati 15, Ohio



Get complete specifications on Fire-Chex '400 shingles from your Carey representative, or write Dept. AR-106, The Philip Carey Mfg. Company, Lockland, Cincinnati 15, Ohio.

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(PRACTICALLY ALL VARIETIES)

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Duriron is the one high quality high silicon iron drain line material that architects and engineers have specified with confidence for more than thirty years.

For permanent corrosion resistance when handling all acids and other commonly encountered corrosives, specify and insist upon DURIRON.

A complete stock of Duriron pipe and fittings is carried by leading wholesalers in principal cities.



THE DURIRON COMPANY, INC. DAYTON, OHIO



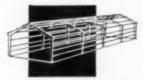






Clients with tight budgets?

-- DESIGN ON A BASIC BUTLER BUILDING



The buildings above are just a few examples of what architects are doing these days, using Butler metal buildings as the basic structure. Where building

capital is limited, Butler buildings give you important opportunities to cut cost corners.

Your engineering costs are minimized. Butler metal buildings are pre-engineered to meet building codes.

Use non-load bearing walls and partitions. The rigid frame structure supports all live and dead loads.

Conserve cover costs. The fire-safe Butler metal roof system is both permanent and economical. In sidewall areas

not calling for architectural effect, specify Butler metal panelling for lowest cost protection.

Construction time and cost are radically reduced on all Butler components. Every part is precision fabricated to fit its mates exactly, which makes construction a fast assembly job. Butler buildings are easily and economically insulated, and when insulated, provide a highly efficient thermal barrier.

Your reputation is safeguarded. Butler buildings are widely accepted for commercial and industrial construction because they are designed and manufactured as permanent structures in plants with the engineering and machinery resources to do the job right. And because Butler is the largest manufacturer of metal buildings, far more standard sizes are available.



Why not investigate the cost advantages of designing on a Butler basic building. Ask your local Butler Builder to drop in and talk it over . . . you'll find his name in the Yellow Pages . . . or write direct to the Butler office nearest you.





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Washington, D.C. • Burlington, Ontario, Canada

THE RECORD REPORTS: CONSTRUCTION COST INDEXES

Labor and Materials

U. S. average 1926-1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assocs., Inc.

NEW YORK

ATLANTA

		lential	Apts., Hotels Office Bldgs. Brick		rcial and Bldgs. Brick and		lential	Apts., Hotels Office Bldgs. Brick		rcial and Bldgs. Brick and
Period	Brick	Frame	and Concr.	Concr.	Steel	Brick	Frame	and Concr.	Concr.	Steel
1930	127.0	126.7	124.1	128.0	123.6	82.1	80.9	84.5	86.1	83.6
1935	93.8	91.3	104.7	108.5	105.5	72.3	67.9	84.0	87.1	85.1
1939	123.5	122.4	130.7	133.4	130.1	86.3	83.1	95.1	97.4	94.7
1946	181.8	182.4	177.2	179.0	174.8	148.1	149.2	136.8	136.4	135.1
1947	219.3	222.0	207.6	207.5	203.8	180.4	184.0	158.1	157.1	158.0
1948	250.1	251.6	239.4	242.2	235.6	199.2	202.5	178.8	178.8	178.8
1949	243.7	240.8	242.8	246.4	240.0	189.3	189.9	180.6	180.8	177.5
1950	256.2	254.5	249.5	251.5	248.0	194.3	196.2	185.4	183.7	185.0
1951	273.2	271.3	263.7	265.2	262.2	212.8	214.6	204.2	202.8	205.0
1952	278.2	274.8	271.9	274.9	271.8	218.8	221.0	212.8	210.1	214.3
1953	281.3	277.2	281.0	286.0	282.0	223.3	224.6	221.3	221.8	223.0
1954	285.0	278.2	293.0	300.6	295.4	219.6	219.1	223.5	225.2	225.4
1955	293.1	286.0	300.0	308.3	302.4	225.3	225.1	229.0	231.5	231.8
May 1956	308.1	300.6	315.0	323.6	319.2	236.3	234.9	238.8	241.7	241.5
иве 1956	314.1	205.3	323.3	328.7	326.2	236.3	234.9	239.7	242.4	245.4
uly 1956	313.7	304.8	323.8	329.2	328,5	239.8	238.4	245.3	247.8	252.6
		%	increase over 19	39			% i	ncrease over 19	39	
July 1956	154.0	149.0	147.7	146.8	152.5	177.9	186.9	157.9	154.4	166.7

ST. LOUIS

SAN FRANCISCO

July 1956	162.5	162.5	143.0	150.3	147.3	165.7	173.2	147.8	147.2	156.4
July 1936	407.0		crease over	1	294.3	200.0		crease over	301.3	298.7
July 1956	289.3	280.9	288.5	299.8	294.3	280.6	271.3	290.9	-	
June 1956	290.0	281.8	288.0	299.4	292.1	279.9	270.1	289.3	300.5	295.7
May 1956	289.5	281.3	287.3	298.8	291.5	280.1	270.6	288.5	299.1	295.3
1955	273.3	266.5	272.2	281.3	276.5	268.0	259.6	275.0	284.4	279.6
1954	266.6	260.2	263.7	273.3	266.2	257.4	249.2	264.1	272.5	267.2
1953	263.4	256.4	259.0	267.6	259.2	255.2	257.2	256.6	261.0	259.7
1952	259.1	253.2	249.7	255.0	249.6	250.2	245.0	245.6	248.7	249.6
1951	252.0	248.3	238.5	240.9	239.0	245.2	240.4	239.6	243.1	243.1
1950	232.8	230.7	221.9	225.3	222.8	227.0	223.1	222.4	224.5	222.6
1949	221.4	220.7	212.8	215.7	213.6	213.0	207.1	214.0	219.8	216.1
1948	227.9	231.2	207.7	210.0	208.1	218.9	216.6	208.3	214.7	211.1
1947	202.4	203.8	183.9	184.2	184.0	193.1	191.6	183.7	186.8	186.9
1946	167.1	167.4	159.1	161.1	158.1	159.7	157.5	157.9	159.3	160.0
1939	110.2	107.0	118.7	119.8	119.0	105.6	99.3	117.4	121.9	116.5
1935	95.1	90.1	104.1	108.3	105.4	89.5	84.5	96.4	103.7	99.7
1930	108.9	108.3	112.4	115.3	111.3	90.8	86.8	100.4	104.9	100.4

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110 index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.



BORDEN MANUFACTURES EVERY TYPE FLOOR GRATING

IN FERROUS AND NON-FERROUS METALS

- EASY TO INSTALL engineered in conveniently sized units for easy installation.
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AMERICAN BLOWER AIR CONDITIONING



L. to r. Consulting Engineer J. M. Schweiger, Planning Director R. A. Flynn, City Manager H. W. Starick, Safety Director C. W. Horlacher, and R. J. Perkins, manager of American Blower's Dayton office, review plans for the Safety Building's air handling equipment.

They're creating another "first" for Dayton

With a reputation as one of the nation's most progressive cities, Dayton, Ohio, has an impressive number of "firsts" to its credit. Dayton, for example, was among the first to employ the popular city-manager type of local government.

The conference pictured above concerns an air conditioning first for Dayton.

For, the new Safety Building - housing all police division functions and municipal courts - is the first building owned by the City of Dayton to be fully air conditioned.

American Blower is a major supplier of air handling

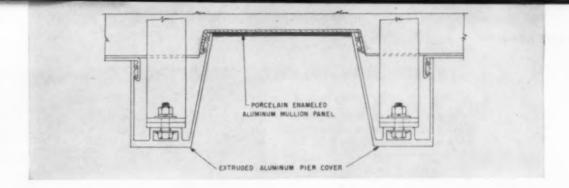
equipment for air conditioning and heating and ventilating in the Safety Building. Indoor temperatures are pleasantly fresh and cool - thanks to the efficient operation of American Blower air handling equipment which handles a portion of the air conditioning load.

The Dayton Safety Building's system is another example of the quality products combined with helpful on-the-spot local service you get when you specify "American Blower." American Blower Corporation, Detroit 32, Michigan. In Canada, look for Canadian Sirocco products.

AMERICAN

Safety Building, Dayton, Ohio. Owner: City of Dayton. Associated Architects: Harry I. Schenck; Lorenz & Williams; Freeman A. Pretzinger, Consulting Engineers; Schweiger, Heapy & Associates, General Contractors: Frank Messer & Sons, Inc. Mechanical Con-tractors; Huffman & Wolfe Company.

Division of AMERICAN-Standard Air conditioning equipment for every business



BANK OF THE SOUTHWEST_Trimmed with 6.2 miles of color-matched

porcelain-enameled aluminum Recently completed, the Bank of the Southwest stands as the tallest welded structure in Houston, Texas. One of the many interesting features of this building is the extensive use made of lightweight materials in the superstructure-especially in the vertical trim on the mullion panels. Here, 32,892 linear feet of aluminum, finished with Du Pont porcelain enamel, were used with color selection to harmonize with the red granite base. Besides the savings in weight afforded by porcelain-enameled aluminum, it gives the added features of lasting beauty and durability. This material stays bright even in industrial atmospheres and under repeated exposure to strong detergents . . . is highly resistant to thermal shock, abrasion and flexing. In addition, aluminum finished in Du Pont porcelain enamels can endure a good deal of fabrication punishment - sawing, shearing, punching, drilling and welding-without exposure of metal or spalling. Du Pont porcelain enamels for aluminum are available in an unlimited range of highly stable colors lending themselves to a

variety of application possibilities. May we send you detailed literature on these porcelain enamels for aluminum? We will be glad to put you in touch with an enameler who is thoroughly familiar with Du Pont porcelain enamels for aluminum and who can handle your requirements.

The coupon below will bring a prompt reply.

Kenneth Franzheim, Houston, Texas

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E. I. du Pont de Nemours & Co. (Inc.)

Electrochemicals Dept., AR-10, Wilmington 98, Delaware

Please send me Technical Bulletin CP 4-454 and illustrated folder on Porcelain Enamel for Aluminum

Have your technical representative call with further details,

City_

"The great dams of the hydro-electric schemes are typical of the new elements which with vision can be forged into the landscape of the future . . ."



TAKING THE SUBTOPIAN BLIGHT OUT OF TOMORROW'S LANDSCAPE



"A landscape which relies on its own proportion and soft almospheric depth to create a scale of its own (above) can very easily be dwarfed by man-made intrusions (below) . . ."



Tomorrow's Landscape. By Sylvia Crowe. The Architectural Press (9-13 Queen Anne's Gate, Westminster, S.W. 1, England) 1956, 20 pp, illus.

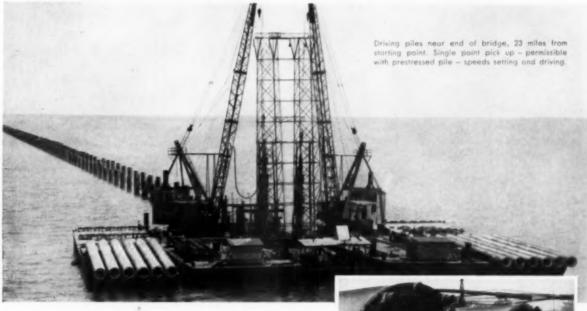
A LITTLE more than a year ago a book entitled Outrage was published in England by The Architectural Press (Reviewed in Architectural Record, November, 1955). The book decried the surburbia disease which has enveloped England and has plagued the rest of the industrial world in postwar years.

Outrage coined the word "Subtopia," formed from "suburb" and "utopia," to symbolize the outlandish destruction of the countryside by suburbian developments. Subtopia was defined as "the annihilation of the site; the steam-rollering of all individuality of place to one uniform and mediocre pattern." This creeping blight, which leaves in its path neither town nor country but "mile upon mile of look-alike shacks, cute rusticities, wires and airdromes," supposedly threatens to engulf the whole English countryside.

Now a less biting, more constructive follow-up to Outrage has been published by The Architectural Press. Tomorrow's Landscape, by Sylvia Crowe, is a positive

(Continued on page 60)

PRESTRESSED CONCRETE 10th ANNIVERSARY



TEN YEARS AGO this month the first successful application of prestressed concrete in the U. S. was completed - the prestressed concrete portion of Roebling's Chicago Warehouse. Four years later the first prestressed concrete bridges in this country were completed - tensioned, of course, with Roebling materials. And during that interval we increased our knowledge through constant research plus the design and fabrication of prestressed concrete decks on several of our Central and South American suspension bridges.

As this new material has caught on with ever-increasing rapidity, engineers and fabricators have turned to us for information on materials and methods. This collaboration has not only helped them but has kept us constantly abreast of new developments and new requirements in tensioning elements.

An example of Roebling's position as America's foremost supplier of tensioning materials is the Lake Pontchartrain Bridge, utilizing 123,000 miles of .192" diameter Roebling wire for prestressing the piles supporting this 24 mile long structure.

When you need tensioning materials or have a problem in prestressed concrete, why not turn to headquarters for suggestions and advice on specific applications? Contact Construction Materials Division, John A. Roebling's Sons Corporation, Trenton 2, New Jersey.

Builders; Louisiana Bridge Co., Mandeville, La. (a joint venture of Brown & Root, Inc., Houston, Texas and T. L. James & Company, Inc., Ruston, La.). Designers, Palmer & Baker, Inc., Mobile, Alabama.



Post-tensioning the cables, Piles are 54" outside diameter 80 and 96 feet long, and stressed with 12 cables each containing 12 wires, .192" in diameter.



Company casting yard where more than 900 feet of the Cen-Vi-Ro type piles were fabricated per day under special license agreement with Raymond Con-





Jon can sa the difference!

Just compare the new Stromberg Electronic Time System . . .

Here are some (just a few) of the many PLUS features

- Jewelled Master Clock movement with automatically wound 72-hour spring power reserve.
- Secondary Clocks standard with hourly and 12-hour supervision — correction cycles completed in 60 seconds.
- Program Unit, capable of 1440 signals daily on each circuit, immediately resets following power interruption.
- Manual signals sound instantly on depressing program key.
- Seven-channel transmitter one for clock supervision, six for program signals.
- Installation and maintenance service available throughout U.S.A. and Canada.

A product of the laboratories of the largest clock manufacturer in the world—YOUR GUARANTEE of performance, quality and dependability.



SUBSIDIARY OF GENERAL TIME CORPORATION

REQUIRED READING

(Continued from page 58)



"Country paths, by the addition of concrete surfaces and iron fences, become urban paths carrying the worst element of town into the country. Paths treated in this barbarous way are simply a means of reaching a destination without pleasure in the going . . ."

attempt to show how that blight can be arrested by prompt, resolute, creative action. Miss Crowe, a practising landscape architect, has spent many years digging into the root causes of the surburban development problem. Tomorrow's Landscape is the culmination of this research presented along with her own practical prescriptions for a Subtopia cure.

Miss Crowe contends that the inevitable intrusion of industry and population can be absorbed, with proper planning, into a natural and beautiful landscape.

"Many of the forces which have made such tragic inroads into the English landscape during the last century cannot be reversed," says Miss Crowe. "They cannot even be halted, but they can be guided if they are looked at with fresh eyes and used as elements of landscape composition."

Her approach is to analyze current building and landscaping projects in England, showing their destructive or constructive effect on the natural environment, and to follow-up with ways destructive elements could be alleviated.

Her fluid style of writing is complemented by a profusion of photographs and sketches which illustrate and emphasize the points she makes so well.

Her book delivers a positive statement; in short, Tomorrow's Landscape shows how we can maintain beauty in the face of the ever-growing trend toward Subtopia.

D.T.

(More reviews on page 440)

New materials mean better homes



...now
a new material
means
better heating

Every year homes become better and better—thanks in part to the wonderful new array of materials science and industry are bringing to the building industry. Now a new material gives you heating and air conditioning you can install with the knowledge that you could sell your customers nothing better. Yet you get the benefits of this new material in units that cost no more than those you are now selling.

The new material we're talking about is Ceramic-Coated steel in Permaglas heating and air-conditioning units. The miracles of research and production that brought about famous glass-lined Permaglas water heaters now give that resistance to rust and corrosion to heating and cooling units. Result: vast resistance to heat and the products of combustion, plus an end to rusting from condensation associated with cooling. Ceramic-Coated steel gives heating and cooling units life expectancy they never had before!

And remember that gas-fired Permaglas units have exclusive A. O. Smith Modulated Heat — the only full-time domestic heating in the world...the only real answer to full-time comfort. We'll be glad to send you full details on Permaglas, the newest in heating and cooling. Your clients and customers will know that a Permaglas-equipped home is a quality home.

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Mew plaster



Patent Applied For



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2 SIMPLE STEPS

SECURE TITUS DIFFUSER

OUTER CONE TO IT

SNAP IN INNER

CONE ASSEMBLY

mounting ring

- Saves up to 80% on ceiling diffuser flush mounting costs.
- Prevents diffuser from ever sagging away from ceiling.
- Especially designed for mounting all Titus' new circular ceiling diffusers.

Here's a combination mounting ring and plaster ground that eliminates hours of extra time and work—makes flush mounting of ceiling diffusers simple, fast, low cost.

Installs in 2 quick, easy steps: (1) Slip neck of *PMR* over duct (2) Secure *PMR* to lathing channels (or construction used) with 2 screws. And that's it!

After plastering simply mount diffuser to PMR with 3 screws. There are no holes to cut in the plaster—no trimming or patching. The Titus Plaster Mounting Ring automatically provides correct size and position of ceiling opening and centers diffuser to it.

Diffusers can never sag away from ceiling because weight of diffuser is supported by sturdy ceiling framework instead of just the duct as in most ordinary installations.

For flush mounting on all types of ceilings. Rigid steel construction. For use with Titus diffusers only.

designed by THE

MAIL COUPON TODAY FOR FREE LITERATURE

TITUS MANUFACTURING CORP., WATERLOO, IOWA

Gentlemen: Send me full details, prices on the new Titus Plaster Mounting Rings that cut flush mounting costs up to 80 % .

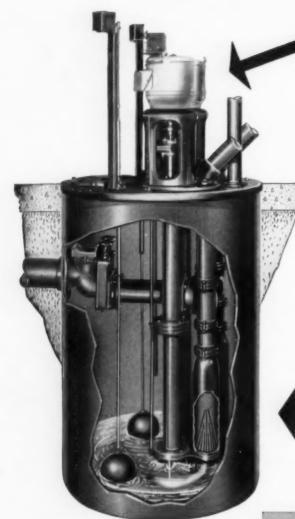
☐ Also send literature on the new Titus Ceiling Diffusers and Accessories.



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Company	
Address	

Avoid pump clogging trouble....

with "FLUSH KLEEN"



Type "F" submerged
"Flush Kleen" sewage ejector

This is the only truly clog-proof sewage ejector. Only liquid is handled by the impeller. All other air or liquid ejectors have working parts in contact with coarse sewage material that causes clogging. In the "Flush Kleen" all coarse matter is strained out, then back-washed from the strainer into the higher level sewer. Of the more than 8000 "Flush Kleen" sewage ejectors used on ships, military installations, municipal lift stations, commercial and industrial buildings of all kinds, not one has ever clogged.

Protect your client — and your reputation. Guarantee owner satisfaction by specifying "Flush Kleen" sewage ejectors wherever sewage must be pumped.

OPERATING DETAILS

"Flush Kleen" sewage ejectors are usually installed in duplex units and operate alternately. While one pump operates, sewage flows into the wet basin through the idle pump. A strainer ahead of the pump impeller retains all coarse sewage matter. (see cutaway)

When the idle pump starts, the coarse sewage matter in the strainer chamber is flushed into the discharge pipe with liquid sewage.

A special check valve prevents discharges back into the inlet line.

Engineering data showing how to determine sewage ejector capacities for any type or size of building are now available. Write to Dept. A for your copy today.



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. . . are already downright favorites with a large and rapidly growing number of architects, air conditioning engineers and installers. For with this line it's never necessary to compromise. It permits you to readily achieve the exact air distribution, direction and volume best suited to each and every situation. There are 26 standard sizes, up to 36" x 12", offering 260 possible horizontal and vertical deflection combinations. Intermediate sizes up to 36" x 36" may be had on order. Front adjustments control face bars and louvers, and opposed louvers permit absolute volume control with equal distribution over entire face. Top quality "Decorator Gray" enamel finish. Your nearby H&C Jobber has complete details. We will be glad to furnish his name and location on request.



FIXT-AIRE ...

. . . return air registers and grilles designed to complement and harmonize with the TRIPL-AIRE line. Registers have a single bank of face bars in fixed vertical or horizontal position, and feature the same opposed louver construction for positive volume control found in TRIPL-AIRE units. Grilles are available with horizontal face bars set at 22° angle for up or down deflection where desired. One-piece sizes up to 36" x 30".

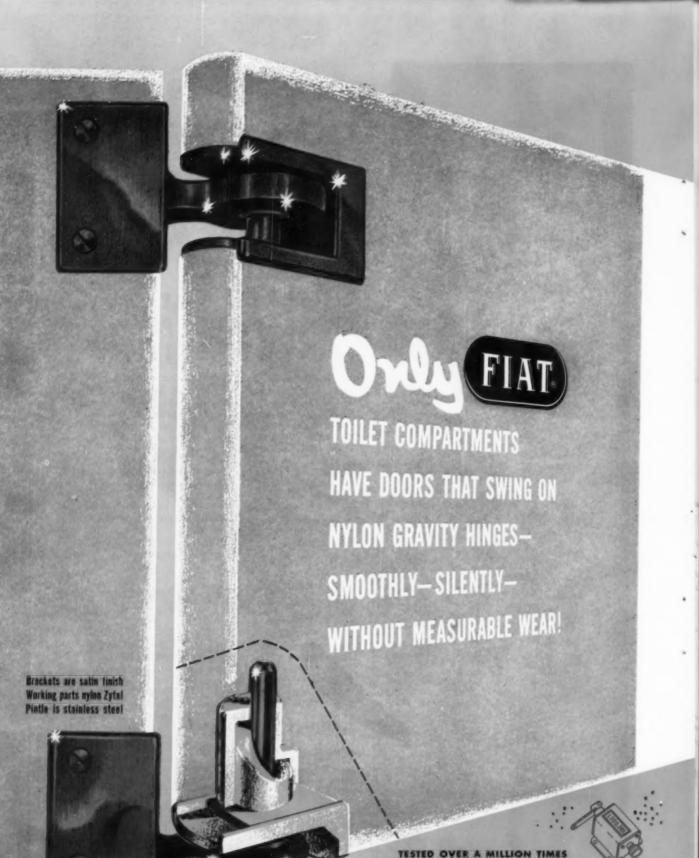
CONVENIENT CATALOG GIVES COMPLETE DETAILS AND ENGINEERING DATA . Available from H&C Jebbers or write direct.





OF RECOMES and COLLEGE

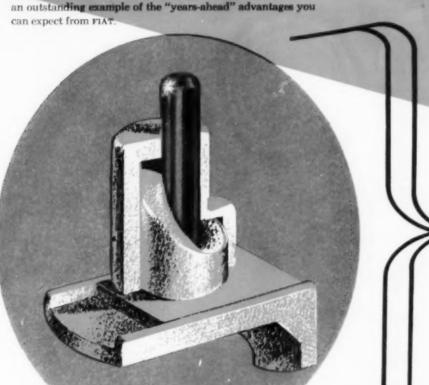
MANUFACTURING COMPANY Dept. I-AC, HOLLAND, MICHIGAN



To prove its superior performance, the new FIAT Life-Line Gravity Hinge of DuPont "Zytel" nylon resin was mounted in a standard compartment door that was opened and closed more than 1,000,000 times. At the completion of the test, closest inspection of the hinge revealed absolutely no measurable indication of wear—proof positive of the lifetime durability insured by smazing "Zytel" nylon.

IN TOILET COMPARTMENT DESIGN

Here, at last, is the hinge that can be built into a compartment door... then forgotten! No springs to wear out—no ball bearings to replace—needs no adjustments—never requires greasing. Truly, Zytel nylon makes this Life-Line** Gravity Hinge a marvel of modern science and engineering. And now it is exclusively available in every FIAT Compartment door—an outstanding example of the "years-ahead" advantages you can expect from FIAT.









NOISE FREE







NOW-CHECK EVERY REASON WHY YOU'RE YEARS AHEAD WITH FIAT!

Remarkable as it is, the new Zytel Gravity Hinge represents but one of many reasons why FIAT should be first choice for the toilet rooms you plan. FIAT brings you ultra-modern designs, enhanced by a wide range of smartest colors. New Polycon** finish (silicon fortified poly plastic) developed specifically to withstand toilet room conditions—looks better, lasts longer, requires less maintenance. Strongest quality construction features exclusive, extra pilaster bracing—rugged, welded doors—new Life-Line hardware, designed and manufactured to outlast the compartment installation. And FIAT meets varying budgets with a wide range of models. Choose from exclusive wood-core Aristo, conventional Duro or economical Permo panel type...all completely superior, grade for grade, in every detail. Safeguard your reputation—compare FIAT before you specify.

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FIAT







Meantecturing Quality Showers and Compartments since 1922

MOST MODERN AIRPORT CONTROL TOWER IS EQUIPPED WITH TODAY'S MOST MODERN DOOR CLOSER

Logan International Airport...Boston, Massachusetts

In today's ultra-modern structures, any door closer which directs attention to itself or is not in full harmony with its surroundings can very easily strike an uncomfortably false note in an otherwise perfect design. There can be no such discord in Boston's striking new airport control tower where doors serving the public are equipped with Norton INADOR closers. They were selected for dependability, low maintenance cost and precision workmanship as well as their unobtrusive efficiency. For complete data on the entire Norton line, see current catalog. Write for your copy today if you don't already have one.



Dept. ARIO6 Berrien Springs, Michigan

NORTON

...In perfect harmony with

Streamlined Modern design

Another Award-Winning Sylvania Lighting Installation ... the new Hudson Falls (N.Y.) Central High School



Sylvania recessed traffer Ratures, mounted crasswise, provide good lighting and clean calling design in this modern library, Installation designed by Sargent, Webster, Crenshaw & Folley, of Syracuse, Weterlawn, Schenectedy, Plettsburgh and Carolina, N. Y.

Unique <u>recessed</u> fixture system lights modern library and classrooms

The new Hudson Falls (N. Y.) Junior-Senior High School is an award-winner. Its architects—the well-known firm of Sargent, Webster, Crenshaw & Folley—took honorable mention in the 1955 School Design Contest sponsored by School Executive magazine.

The school's unique lighting system played a major role in winning the award.

In classrooms, lecture rooms, reading rooms and music rooms, the architects specified Sylvania recessed troffer fixtures. Up to 610 of these 4-foot units, mounted crosswise in continuous rows, provide good working lighting levels with unusually clean and pleasing ceiling design. Special Corning low-brightness lenses on

the fixtures give high diffusion, virtually eliminate shadow and glare.

Sylvania NTWS industrial type fixtures with slotted reflectors also provide excellent lighting in this school, in workshops, machine shops, locker rooms, etc., at low cost.

The Hudson Falls Central High School story is but one example of how Sylvania can tailor a lighting system to meet your school's needs . . . within cost limits . . . from a complete line of school lighting fixtures. For expert assistance with your lighting problems—in remodeling or new construction—we invite you to call in the Sylvania lighting specialist in your area.

SEND THE COUPON FOR FREE HELPFUL BOOKLET



In classrooms, too, the Hudson Falls Junior-Senior High School gets good lighting levels from Sylvania recessed troffer fixtures with low-brightness lenses.

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. . . fastest growing name in sight

LIGHTING . RADIO . ELECTRONICS . TELEVISION . ATOMIC ENERGY

Sylvania Electric Products Inc. Dept. K20, Lighting Division—Fixtures One 48th Street, Wheeling, West Virginia

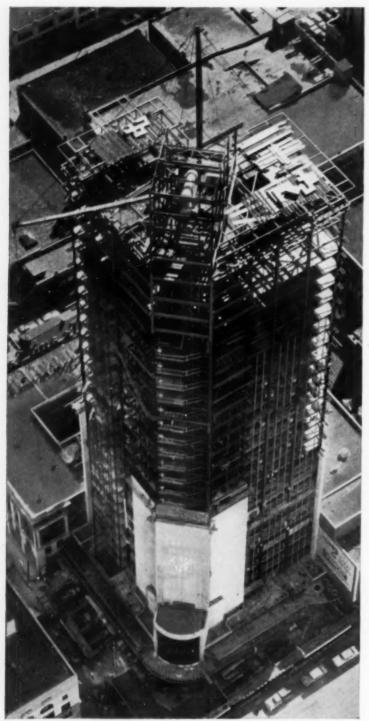


Please send me your free informative booklet, "Some Whys and Hows of Modern School Lighting."

☐ Have a Sylvania lighting specialist call on me.

Organization

City____Zone__State



Architect: Edwin A. Keeble Associates, Inc.; Structural Engineer: Ross H. Bryan General Contractor: J. A. Jones Construction Co.

Bolted Frame For Nashville Building

Here you have a bird's-eye view of the steelwork for the 30-story home office building erected at Nashville for the Life & Casualty Insurance Company of Tennessee. The framework for the 409-ft structure, weighing about 3,350 tons, was erected quickly and economically by means of bolting. Bethlehem High-Strength Bolts join the structural members.

Bethlehem High-Strength Bolts are ideal for saving time in erecting structural steel. The bolts are used with hardened washers, and are installed by a two-man crew, one using a holding wrench, the other a calibrated impact wrench. Installation is accomplished in seconds, yet each joint is tight and sound.

OTHER ADVANTAGES

High-strength bolting is relatively free from noise, as the impact wrench is less noisy than a riveting gun. Besides, there are no fire hazards involved, for the bolts are installed cold.

Bethlehem High-Strength Bolts are made of carbon steel in a wide size range. They are heat-treated by quenching and tempering to meet the requirements of ASTM Specification A-325. For full details, drop a line to the nearest Bethlehem sales office.

SEND FOR NEW BOOKLET

We recently issued a 24-page, twocolor booklet on high-strength bolting. It is profusely illustrated, and contains a wealth of material for reference. Write today for your copy.

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BETHLEHEM STEEL

HOW WOULD YOU DO IT ?

his way

ROOF VALLEY DETAIL

or this way?

ROOF VALLEY DETAIL Fig 2

In Fig. 1 above, the detail shows that the valley is connected to the metal roofing sheet with a ½" wide unsoldered seam.

In Fig. 2 the valley sheet extends up under the roofing pans at least 6" and the roofing pans are connected to the valley sheet by a %" lock as shown.

The method shown in Fig. 1 can be the cause of many leaks that occur at a valley. When you consider that no other roofing material

would be installed to lap over the valley flashing '4" it doesn't seem logical that because the roof covering is metal a '4" lap will

not leak.

To avoid any chance of leak trouble either method shown in Fig. 2 should always be employed. Should the water be diverted against this lock by ice, leaves, sticks, etc. that might lodge in the valley, no leaks will occur because a head lap was provided.

We do not wish to presume to tell you how to design your structures or dictate their construction. For there are many satisfactory methods of installing gutters, leaders, roofs, flashing, coping covers, etc., which, of necessity, change with the design and type of construction and materials used. The purpose of this advertisement is to point out the methods of installation that have been proved by many years of use, and backed by more than a century and a half of experience in working with copper, to be the most satisfactory techniques. You will find these methods in Revere's 110 page brochure, "COPPER AND COMMON SENSE." Send for a copy today. And remember: Revere has a staff of specialists known as Technical Advisors, whose experience qualifies them to render valuable service and advice regarding the use of metals in the building field. Feel free to consult with them at all times regarding the use of Revere Copper; you incur no obligation. Revere Technical Advisors may be contacted through the Revere Office nearest you.



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Western home — a tribute to the and versatility of concrete masonry.



A firesafe community of 475 homes, all built of 8" lightweight black, in Hyde Park section of Las Vegas crete masonry is as appropriate as its appear-

ance. It blends perfectly with the ruggedly beautiful scenery for which the west is noted

. . . fitting in harmoniously with mountain

or valley backgrounds or semi-tropic sur-

Noted for its beauty, uniformity and long-

lasting qualities, Vibrapac Block makes new

friends everywhere, not only in the west

but throughout the world. Complete literature

on request. Write Besser Company, Box 173,

Block is Fast Becoming a Popular **Building Material in California**

Nowhere are the many advantages of block valued more highly than in California and other western states. In that area, a home or building must be cool during the hot days of summer . . . warm during frosty weather . . . dry when the "dew" falls . . . strong and safe if the earth should shake . . . secure against insects, rodents, fire, flood and storm , , . comfortable and dependable under all conditions

This is a large order . . . but block fills it admirably. In fact, no other building material so completely meets all of the specifications for an adequate western type home or building.

Vibrapac Block, in particular, has much to offer the architect and builder. Produced automatically with Besser Vibrapae Machines, this popular building material is highly resistant to stress, strain, weather and moisture.



The many patterns, textures and sizes of concrete masonry are of keen interest to creative designers. Its adaptability is a major advantage. Churches, schools, hospitals, commercial and industrial buildings as well as homes can be built of Vibrapac block. So can any part of a building, or the entire

building, from roof to basement.

For the western scene, perhaps no characteristic of con-

roundings.



These exceptionally beautiful black walls

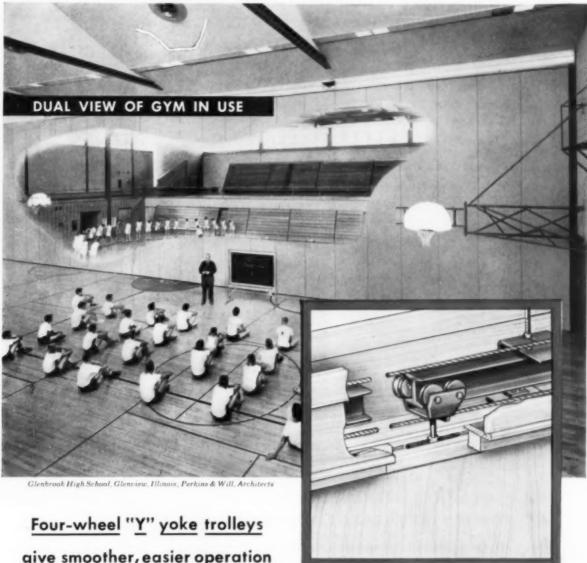


Note the uniform texture and straight, sharp edges of this beautiful concrete block wall



California residence built with 4" high black. This beautiful home provides gracious living in the most modern manner ... with a lifetime of satisfaction and security for its owner.

Exclusive feature of Brunswick-Horn folding partitions



give smoother, easier operation

Here's an important exclusive feature that results in smoother, easier operation of your folding partition when you specify Brunswick-Horn. Each "Y" yolk trolley operates on four precision machined cast steel rollers that fit the contour of the "I" beam track perfectly. Pre-lubricated needle bearings as-

See SWEET'S 22d

THE BRUNSWICK-BALKE-COLLENDER COMPANY Horn Division . Marion, Virginia

sure long, trouble-free use. This means perfect alignment between track and trolley at all times, maximum support for the full weight of the partition.

Why not discuss all of these fine features of Brunswick-Horn folding partitions with your nearby representative today?



POWERS Temperature Control

in 1915 and POWERS AGAIN in the

new Highland Park High School

"Because of the many years of dependable control obtained from Powers equipment and the prompt service received whenever required in our old buildings, another Powers temperature control system was installed in our new high school which was planned to meet the needs of 2,000 students" ... Mr. E. W. Zaeske, Supt. of Buildings and Grounds.

Functional and architectural features of Highland Park's new high school have been carefully executed to conform to the highest quality of modern school design and to meet the stipulation of keeping future maintenance costs at a minimum.

Since 1891, Powers temperature control systems have been noted for their low operating and low maintenance cost. 25 to 50 years of dependable operation with a minimum of repairs is reported by many satisfied users.

Comfort and Fuel Economy in the 87 classrooms and other spaces here are provided by a Powers control system which regulates the following heating and ventilating equipment:

A Powers MASTROL system regulates the temperature of the forced hot water supplied to convectors under the control of a Powers thermostat for each space. Ventilation is provided by Powers controlled fan units located throughout the buildings.

Natatorium is Unique in that provision is made for the comfort of spectators as well as the swimmers. Convectors in the pool area maintain air at 86° F. while spectators are blanketed with air at 76 to 78° F.

If You Are Planning a New School or remodelling an old one, ask your architect or engineer to include a Powers Quality system of temperature control. You will help insure utmost comfort and lowest upkeep cost.





THE POWERS REGULATOR COMPANY

SKOKIE, ILLINOIS Offices in chief cities in U.S.A., Canada and Mexico

65 Years of Automatic Temperature and Humidity Control



Symbol of Economy and Quality Control



Typical Classroom



Library



Band Room in Music Dept.



Highland Park, Illinois, High School

Loebl, Schlossman & Bennett, Architects
Samuel R. Lewis, Consulting Engineer
Gust K. Newberg Co., General Contractor
Adelman Heating Corp., Heating Contractor
All of Chicago, Illinois

Photos below show one of the 87 classrooms and some of the other spaces controlled by POWERS



Cafeteria and Multi-Purpose Room



Exhibition Gymnasium



Swimming Pool 50 x 75 ft.



Neat finish to another Monel Roofing Sheet job. More and more sheet metal men are finding that these jobs go smoothly, make profits.

This contractor got a Monel roofing job. Could you?

Look ground you! New buildings everywhere. And architects specifying Monel an ickel-copper alloy roofing for many of them.

Are you getting your share of these jobs? Or are they going to competitors because you've never worked with Monel Roofing Sheet before?

It's never too late to start. Your first Monel Roofing Sheet job will prove it. Use the same techniques as with any sheet metal.

Use the same tools, Nothing new to buy,

Monel Roofing Sheet has a special roofing temper.

It's easy to cut, form, 180° bends are

It's easy to solder. Pre-tin sheets in the shop and use a hot heavy iron.

Be ready to quote. On public buildings, schools, churches, factories. Anywhere there's call for long-lasting sheet metal work.

Get a free copy of "Basic Application Data — Monel Roofing Sheet." Gives installation hints. Send a letter or card today.

The International Nickel Company, Inc. 67 Wall Street New York S. N. Y.



A good job. Aerial view of V. A. Neuropsychiatric Hospital near Pittsburgh. Sixteen buildings. And all have Monel flashings and drainage systems. Sheet metal work by Miller & Meyer, Pittsburgh.



Monel Roofing ... "for the life of the building"



Today's RLM "Specs" for **Industrial Lighting Units are**

Back in 1919, when the first RLM Dome Reflector Specification was established, if someone had suggested that someday industry would require a lighting unit which directed 20%-30% of its light toward the ceiling-there would have been quite a few raised eyebrows. Yet, today 20%-30% Upward Light is an

accepted factor contributing to better seeing in modern factories . . . while the basic RLM Dome is still indispensable in many industrial applications.

Through the years, RLM Standards for quality in lighting equipment performance and construction are keeping pace with industrial lighting progress. Today, both the first and latest types of units are covered by HIGHER THAN EVER RLM SPECIFICATIONS ... and so are 34 other incandescent and fluorescent units for which RLM Standards have been established.

It is especially important for you who buy, use, specify or sell industrial lighting equipment, to take advantage of these

higher-than-ever specs. More than ever before, they contribute to uniformly satisfactory industrial lighting equipment performance. The 1956 Edition RLM Book brings you all the newlyestablished and revised RLM Specifications. Get your free copy from: RLM Standards Institute, Suite 827, 326 W Madison Street, Chicago 6, Illinois.

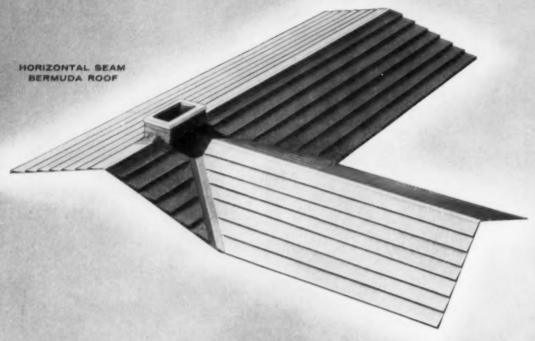
Typical HIGHER-THAN-EVER RLM SPECIFICATIONS

for incandescent and fluorescent units: New High Reflection Factor ●New High Light Output

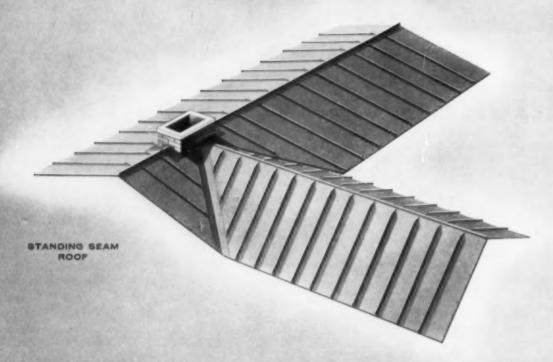
for fluorescent units:

- All-White Porcelain Enamel Reflectors
 Upward Light for more Brightness Control
 New Shielding Angles for less Lamp Glare

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Follansbee Terne lets you put DESIGN in the roof..



A TERNE ROOF WILL ADD BEAUTY ...



... and we will continue to use Lehigh Mortar Cement" • "As on other projects, we used Lehigh Mortar Cement in the construction of the Everglades Bank of Fort Lauderdale, Florida," writes Mr. Robert R. Snead of the Richardson Construction Company. "Our masons like the plasticity and workability of Lehigh Mortar Cement. Past experience has assured us of a uniform color of the mortar joint."

And Mr. Snead concluded, "We are well satisfied with Lehigh Mortar Cement and we will continue to use it on future jobs."

This is the kind of satisfaction that Lehigh Mortar Cement is giving on countless masonry jobs all over America. You can approve its use with the assurance that it exceeds the most rigid Federal and ASTM Specifications.

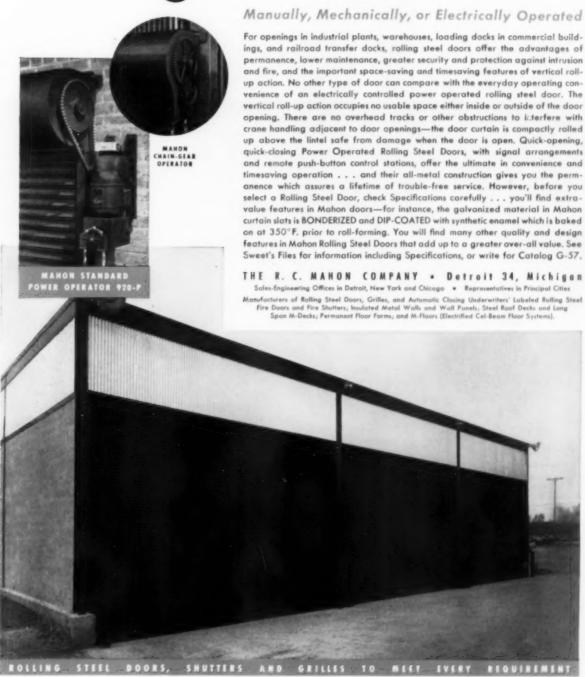




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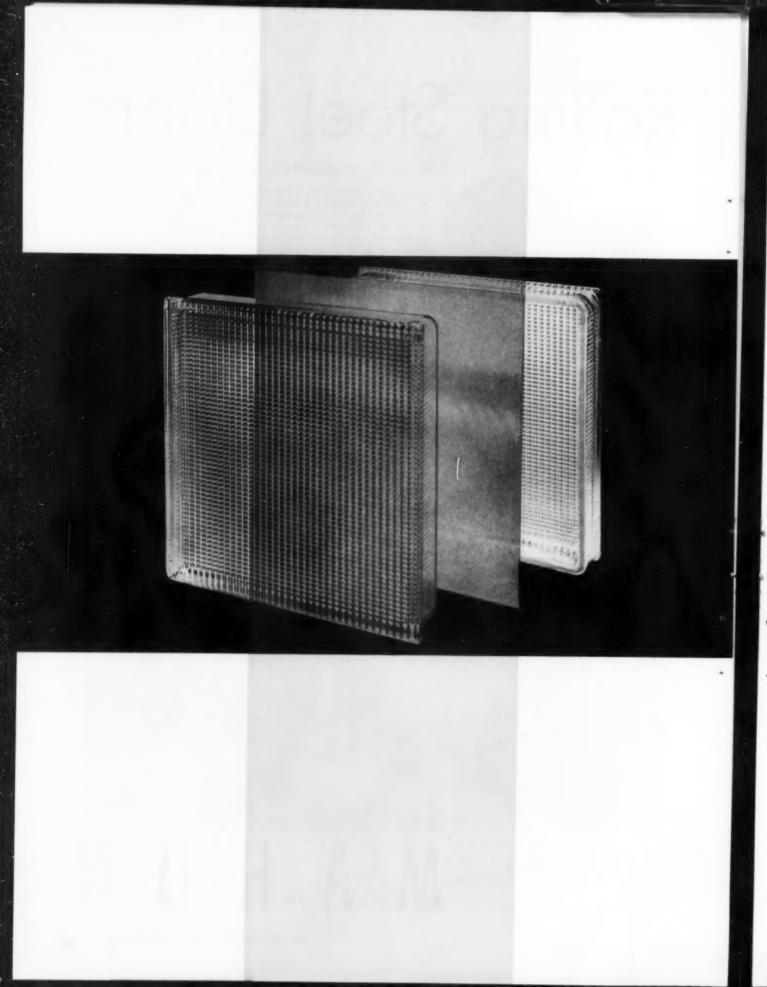
LEHIGH PORTLAND CEMENT COMPANY Allentown, Pa.

Rolling Steel Doors



Three Mahon Power Operated Rolling Steel Doors 23 Ft. x 16 Ft. installed in double truck openings in an enclosed loading dock in Udylite Corporation's new plant in Detroit, Mich. D'Dell, Hewlett & Luckenbach, Architects. Barton-Malow Co., Gen. Contrs. Two more Mahon Power Operated Rolling Steel Doors 17'-2" x 23"-0" are installed in railroad openings in this new, modern plant.

MAHON





SUNTROL... color... function

Subtle green Suntrol adds the design expression of color to glass block fenestration. A sealed-in fibrous green screen, shown in the exploded view at the left, produces a pleasing accent tone on panel exteriors . . . a soft, cool glow inside.

Functionally, Suntrol keeps out more heat and glare than other types of glass.

A modular product, Suntrol is available in two sizes— 8" and 12"—and in three types—light-directing, lightdiffusing, and toplighting.

Specified for color, or for function, or both, subtle green Suntrol offers the architect a versatile material for forecast designing. Suntrol is an exclusive PC product.

For details, write Pittsburgh Corning Corporation, Dept. C-106, One Gateway Center, Pittsburgh 22, Pa. In Canada: 57 Bloor Street West, Toronto, Ontario.

PC Suntrol Glass Blocks



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Eliminate excess weight and cost, and cut construction time with Sprayed "Limpet" Asbestos used directly on steel surfaces.

Underwriters' Laboratories, Inc. has approved Sprayed "Limpet" Asbestos as a 4-hour fire retardant when applied in recommended thicknesses right to steel beams, columns, and cellular floors.

And Sprayed "Limpet" Asbestos controls sound, is an excellent thermal insulator, and controls condensation.

Write for full details on Underwriters' Laboratories, Inc. findings and for complete information on Sprayed "Limpet" Asbestos.

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450,000

Square Feet of PERMALITE PLASTER*

PITTSBURGH STATE OFFICE BUILDING

Pittsburgh, Pennsylvania

A project of The General State Authority

Columns and Beams:

270,000 sq. ft. 4-hour fire ratings have been gained here by Permalite plaster, applied 1%" thick over self-furring lath on beams and columns.

Ceiling, spandrel, and girder beams are plastered with Permalite plaster,

1" to 1\%" thickness.

Ceilings: 180,000 sq. ft. Metal lath ceilings are fire-protected by one inch of plaster (measured from the face of the lath). Permalite plaster is applied here as a ¾"thick brown coat, by an E-Z-On plastering gun.

*Permalite plaster refers to plaster made with Permalite perlite aggregate.

Perlite Division, Great Lakes Carbon Corp.

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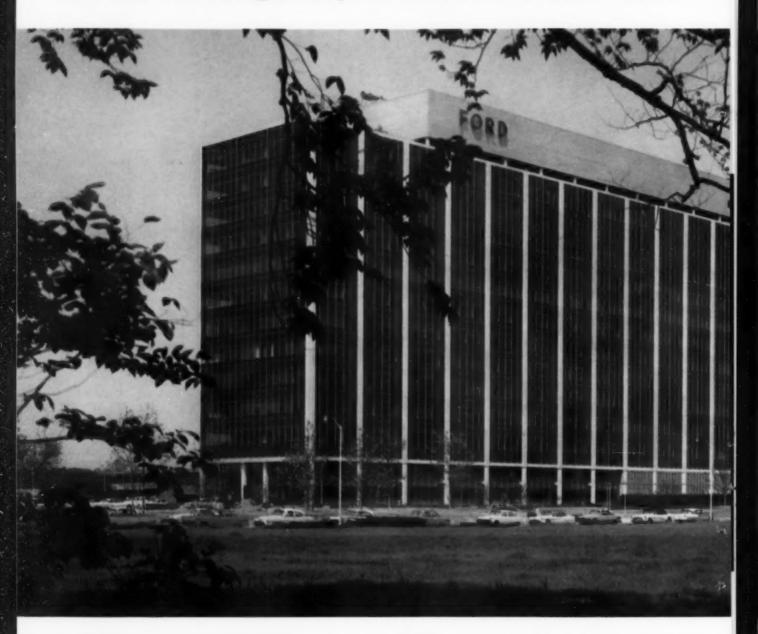
Architects: Altenhof and Bown, Pittsburgh
Engineers: Tower, Levinson & Long, Pittsburgh
General Contractors: Navarro Corp., Pittsburgh
Plastering Contractors: Siciliano Brothers, Pittsburgh
Permalite Supplied by: Tom Brown, Inc., Pittsburgh

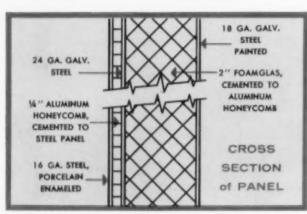
Permalite Processed by: Perlite Manufacturing Co., Carnegie, Penna.

Permalite

the largest selling perlite aggregate in the world

World's largest porcelain-enameled







curtain wall installation



Architect: Skidmore, Owings & Merrill, New York.
Panels Porcelainized and Fabricated by:
Ingram-Richardson Mfg. Co., Beaver Falls, Pa.
Builder: Bryant & Detwiler Co., Detroit.

made from USS Vitrenamel Sheets

Observers have said that the Ford Central Staff Building in Dearborn has "one of the most durable curtain walls ever built."

Each panel is really a five-piece sandwich, with an outer surface of 16-gage porcelain-enameled steel bonded to a ¼" expanded honeycomb for absolute flatness. Then comes a sheet of 24-gage galvanized steel, two inches of cellular insulation and an 18-gage galvanized steel interior skin. Everything is laminated together to form a single-piece wall panel.

The panels are used in combination with tinted, heatabsorbing glass, and the effect is completely impressive. The entire building seems actually to radiate a soft, blue-green light (which is the color of the porcelainenameled steel panels).

This is truly modern design, simple and handsome.

The steel panels are only $2\frac{1}{2}$ " thick, and they weigh only $7\frac{1}{2}$ pounds per square foot. Substantial savings are possible due to the light weight (lighter structural framework required), the high insulation value (U=.15) and the speedy erection routine—reflected in the fact that a six-man crew can install about four panels per hour. Some 90,000 square feet of paneling was used on this building (6,616 panels), and at the time of writing, this was the largest use of porcelain-enameled steel in a single structure.

For richness of color, durability and low cost, porcelainenameled steel is unique in the field of curtain wall materials. When combined with structural steel (for strength) and stainless steel (for appearance or contrast coloring), you can create endless design variations that meet all the standards of good engineering practice.

For more information, write to United States Steel, Room 2801, 525 William Penn Place, Pittsburgh 30, Pa.



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USS Stainless Steel . USS Structural Steel . USS Vitrenamel Sheets

BUILDS THEM

dependable

Equipped with time-tested hermetically sealed compressor for long life and trouble-free operation.

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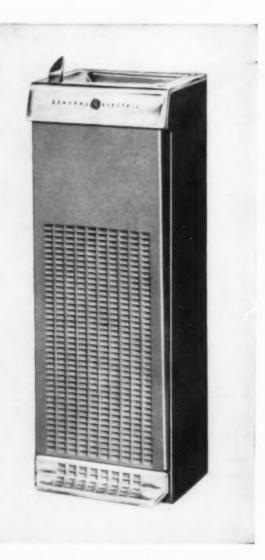
Simple, modern styling with louvered front. Hammered soft gray finish lends itself to every interior.

compact

Take up to 30% less floor space. Fit easily in shallow corners. Over-all depth is up to 5" less than other makes.

and thrifty

General Electric engineering for maximum efficiency cuts water and electricity bills. Operating cost is only pennies a day.





WATER COOLERS

for offices, stores, institutions and factories

These features make the big difference:

- 1. Full-width foot pedal for easier water control.
- 2. Anti-splash basin prevents splattering.
- 3. Adjustable dial has 8 settings for control of water temperature.
- Extra-large stainless steel reservoir guarantees ample supply on peak demand days.
- 5. Direct rad to bubbler control assures steady stream of water.
- 6. Snap-off front panel for easy maintenance.

Whenever you include water coolers in your floor plans, specify General Electric Water Coolers...not only for quality and special features, but because there's a General Electric model to fit your particular requirements. They range in capacity from 2.85 to 21.5 gallons per hour. The standard General Electric 5-year protection plan backs up famous General Electric quality. Call your local General Electric Water Cooler dealer or write to General Electric, Commercial and Industrial Air Conditioning Department, 5 Lawrence Street, Bloomfield, N. J.

Progress Is Our Most Important Product

GENERAL 🍪 ELECTRIC



The display windows of John M. Smyth Company, Chicago, one of the nation's finest home furnishing stores, demanded glare-free lighting in their large display windows to attract attention . . . create atmosphere . . . permit immediate appraisal. To provide the necessary high levels of glare-free illumination, Architect L. R. Sumnarhoff chose the attractive and functional Electro Silv-A-King Louver-all Ceiling.

Equally important was the choice of ADVANCE Fluorescent Lamp Ballasts to serve as Silent Partner... as the heart of this efficient lighting system. High lighting efficiency, trouble-free operation, and peak performance, prime requisites of any lighting installation, are guaranteed by the selection of ADVANCE Fluorescent Lamp Ballasts.

Continuing research and constant new developments by the ADVANCE TRANSFORMER COMPANY have made possible the introduction of many new ballasts with exclusive patented features. Thus, ADVANCE provides lighting equipment manufacturers, designers, architects, engineers, contractors and other fluorescent lamp ballast users with the world's most extensive line of fluorescent lamp ballasts. When you use ADVANCE, there is a ballast for every specific purpose, never a need to compromise.

For anyone who manufactures, specifies, installs or uses fluorescent lighting, ADVANCE TRANSFORMER COM-PANY has prepared helpful literature which will be sent on request without obligation. Write today.

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Good Windows, Yes!

-But A Bayley Specification assures you of MUCH MORE!!

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- Engineering Consultation Based on 77 Years of Reliability and Leadership In Window Development.
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The over-all reliability of a 77 year old, nationally recognized, financially responsible company with complete, modern manufacturing facilities; supported by a nationwide sales engineering and service organization.

Bayley Projected Windows and Bayley Curtain-Wall system — in aluminum and steel — has had a major influence on today's trend from the old conventional to the modern. If you are not familiar with Bayley Details see Sweet's or write; or call in your local Bayley Representative.





Bayley Curtain Walls in Whitehall Junior High School, Allegheny County, Pa. Architect, Altenhof & Brown, Pittsburgh, Pa.; Builder, Brownsville Construction Co., Brownsville, Pa.



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Springfield, Ohio

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VISQUEEN film under slabs reduces labor costs 50% for Saginaw builder



VISQUEEN film is best permanent moisture barrier under concrete slabs or floors. Wide widths and light weight mean low laying costs.



Use VISQUEEN film as a moisture vapor barrier to keep water out of stud walls. Eliminates paint peeling and prevents rot.



You can't get a better curing blanket for concrete than VINQUREN. Use it on floors, aprons, paving, roads.

Bob Braun of Braun Builders, Saginaw, is finding more and more ways to get greater on-the-job savings with VISQUEEN film. Here's what he has to say: "VISQUEEN film is not only the best permanent moisture barrier we have found, it is also the most economical to use. My men can lay it easier and faster. Saves up to 50% of our former labor costs. But what's more, we use it to cover expensive face brick stacked at the job and also as a temporary closure to protect men

working inside. You just can't beat VISQUEEN film for on-the-job versatility. Does so many jobs, I'm amazed it costs so little."

Only VISQUEEN film is available in widths to 32 feet.

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Important! VISQUEEN Film is all polyethylene, but not all polyethylene is VISQUEEN. Only VISQUEEN has the benefit of research and resources of The VISKING Corporation.

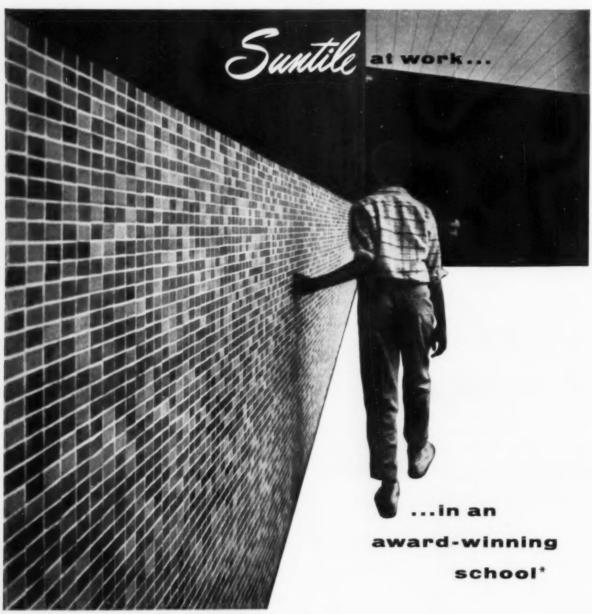
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HANDSOME PROTECTION

Here's what Superintendent of Schools Theodore L. Bystrom says about ceramic Suntile in the award-winning Havens School, Piedmont, California, designed by noted school architect John Carl Warnecke:

"We are very pleased with this corridor wainscot of ceramic Suntile. It's handsome, protects the walls from normal school traffic and lowers our maintenance and cleaning costs."

When you want both style and practicality for floors and walls—call your Authorized Suntile Dealer...You'll like the functionally balanced Suntile colors... And for special designs in Suntile, the services of our staff of trained ceramic artists are always available to you at no cost.

SEND FOR NEW LITERATURE showing full color range, installations, and exciting new stock patterns by designer Max Spivak. Address Dept. AR-106



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P.O. Box 71 Cincinnati 15, Ohio

Look to Standard for DRAFTITE* weatherstripping of aluminum windows

The venting portions of all windows in this modern New York skyscraper at 112 West 34th Street are weather-sealed with Draffite . . . Brugnoni and Boehler, Architects.

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The modern skyscraper, shown above, is just one of many buildings where Draf Tite wool fiber has been used as a seal around the opening perimeters of aluminum windows.

Where friction is a factor, wool fiber is the most satisfactory material for eliminating air infiltration. For proof, we can point to the many manufacturers of prime windows who have selected this material as the best weather-stripping for their products.

Standard has long been a leading supplier of this type of seal and is currently producing 250 million feet annually.

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The Standard Products Co.
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Projected vent-type aluminum window, as illustrated, supplied by Cupples Products Corporation, St. Louis, Missouri.

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EXCITING NEW DECORATIVE ESCUTCHEONS FOR RUSSWIN DOORWARE

Interesting and unusual possibilities for embellishing doorways are offered by new Russwin decorative escutcheons. Russwin designers have gone "all out" to achieve not only distinctive and attractive effects in metals, but also an ultra-modern note in doorware decor with woods. Extension link units are available for long backsets. Be sure to see these creations on display at authorized Russwin distributors ...everywhere.

Reproduced here are four pages of the new, smartly-designed, four-color brochure specifically developed to help Russwin distributors introduce the sparkling array of decorative escutcheons and new knob styles.

Metals and woods are shown exactly as they appear.

For a copy of this brochure, write Russell & Erwin Division,

The American Hardware Corporation,

New Britain, Connecticut.





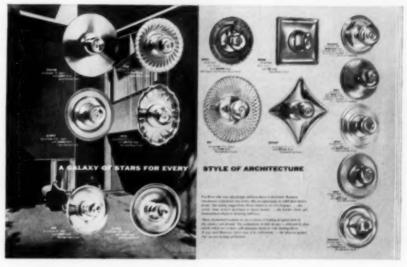
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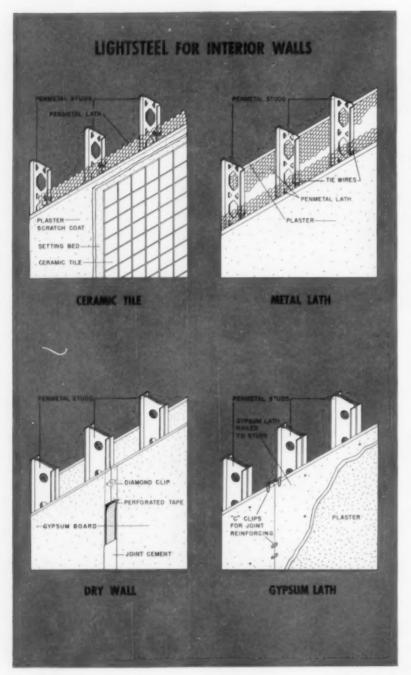
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In school construction...

LIGHTSTEEL

offers a combination of advantages



Architects are specifying increasing quantities of LIGHTSTEEL in new schools—for complete framing, and for specific uses such as interior walls, exterior walls, corridor joists, canapies, floor joists and roof rafters. Because of its versatility, there is scarcely a school where LIGHTSTEEL cannot be used to advantage.

In the case of interior wall construction, LIGHTSTEEL studs provide rapid and economical means of attaching collateral materials. Any materials may be used.

The fire safety and permanence of LIGMTSTEEL cannot be approached by wood studs. It offers all of the advantages of heavier-grade steel without the excessive weight and high cost of overdesign. To achieve comparable sound reduction with masonry would require a wall of two to three times the thickness—which means less floor space, resulting in smaller or fewer classrooms.

Economical to buy, lightSTEEL also cuts erection costs. Complete wall units can be shop assembled, then trucked to the job site for immediate placement.

For complete details of the many advantages of LIGHTSTEEL, send for Catalog and Technical Manual. No cost or obligation.

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PM-121



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sharpens pencils to one ten-thousandth of an inch!

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The results enable us to test our research, confirm our improvements and maintain our quality. Whether you sharpen your pencil by knife, razor, sandpaper block, or regular pencil sharpener, remember Two-Ton Tillie. It's part of Eagle's continuing research to keep TURQUOISE the finest drawing pencil in the world.

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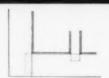


overhead type commercial doors



BALL BEARING ROLLERS

with double-thick steel tread -smooth, quiet



MORTISE AND TENON JOINTS

waterproof glued and steel doweled—extra strong



SEAL-A-MATIC HINGES

graduated for weather-tight protection

free architect's manual



Complete details, specifications, drawings, etc. on Ro-Way's entire line. Especially helpful in selecting just the right door. Ask for Manual 55.

RO-WAY HARDWARE Parkerized and painted for maximum rust prevention



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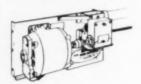
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both drum and hand sanded for smoothest finish



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More homes are being built with concrete block masonry than ever before. And many builders are learning that concrete block made with Duraplastic* air-entraining portland cement are better in quality. They have more uniform dimensions, truer edges, are more cleanly formed, and generally better in appearance. Naturally, such block make better-looking masonry. In addition, Duraplastic-made block are more weather-resistant, and add durability to concrete block walls. For better masonry on your jobs, use concrete block made with Duraplastic cement.

Close-up of concrete block wall shows flush vertical joints, and tooled horizontal joints, to accentuate long wall lines. Concrete block painted with durable white portland-cement-base paint provides a decorative contrast to stone masonry. Cement paint increases both the attractiveness and weather-resistance of block walls. Above residence in Harrington Park, N. J.

D-162

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*"DURAPLASTIC" is the registered trade-mark of the air-entraining portland cement manufactured by Universal Atlas Cement Company.

AIR-ENTRAINING PORTLAND

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MAKES BETTER-QUALITY CONCRETE PRODUCTS

Now-for maximum Roof Protection Johns-Manville

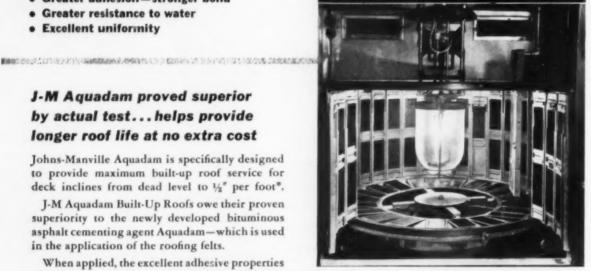


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Aquadam offers these important advantages:

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Tests prove Aquadam's superior weather resistance!



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J-M Aquadam proved superior

by actual test...helps provide longer roof life at no extra cost

Johns-Manville Aquadam is specifically designed to provide maximum built-up roof service for deck inclines from dead level to 1/2" per foot*.

J-M Aquadam Built-Up Roofs owe their proven superiority to the newly developed bituminous asphalt cementing agent Aquadam-which is used in the application of the roofing felts.

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> For complete information about Aquadam Roofs, see your Approved Johns-Manville Built-Up Roofing Contractor. He's listed in the classified section of the telephone directory. Or write Johns-Manville, Box 158, New York 16, N. Y. In Canada, write 565 Lakeshore Rd. East, Port Credit, Ont.



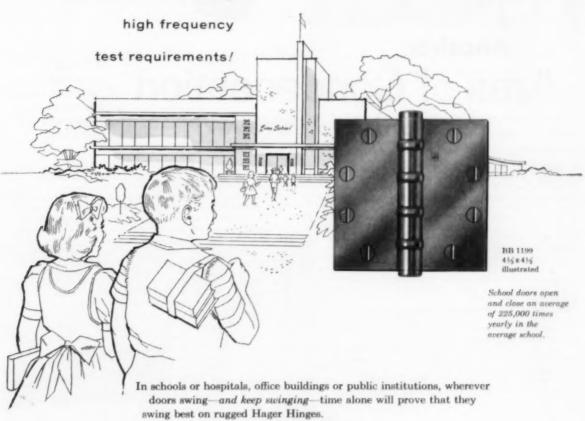
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Architects and specifiers who demand exacting performance know the reputation for strength and stamina of Hager Butt Hinges as intimately as their own slide rules. With the experience of years of tests and analysis, they've learned that Hager engineered Butt Hinges meet the test of time for heavy traffic loads.

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Another Area of Condensation banished forever!

THESE
UNIQUE
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DRY THEMSELVES
BY WEATHER AIR
VENTILATION

In the last large area of condensation — in and under the roofing — vapor barriers have failed to give anything but a partial answer. Wilson Air-cor Roof Decking now gives the final, complete answer with a scientific method of removing moisture from the decking itself — by weather air ventilation.

Architects and builders are no longer limited — by local conditions of climate — in their selection of the finished roofing material. For any-type of structure and any pitch of roof, Wilson Air-cor provides the dependable roof decking.

126 days of testing by the Engineering Research Department of a leading State University demonstrated "the feasibility of actually drying a wet roof of the Air-cor type by weather air ventilation." The published report recognizes the impracticality of a perfect vapor barrier. With Wilson Air-cor, there is no need for a perfect barrier. The revolutionary principle of ventilation embodied in Wilson Air-cor Roof Decking overcomes the severest conditions of humidity and temperature. Extensive research and actual use prove that Wilson Air-cor makes condensation a problem of the past.

The description of this remarkable product in the Homasote Handbook begins: "The panel consists of 2×2 wood members 12'' o.c. nailed and glued between two pieces of $^{10}\!\!\!\!/_{12}$ " Homasote. On the lower inside of the Wilson Air-cor Panel there is $^{3}\!\!\!\!/_{12}$ " of batt type insulation, with a vapor barrier on the bottom side, and a ventilated

paper on the top side. At each end there are two small wood blocks to support the Homasote. With only these two small blocks, there is a width of 16" at each end for air to flow from panel to panel." Air enters at the roof edges—where a rake mold is nailed on \(\frac{\pi}{2} \) blocks over screen wire—and insect-free air circulates the length of the roofing.

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The new 68-page Homasote Handbook has the right answers to 99 other building problems—answers backed by 46 years' experience in the making of quality materials. We are proud of this book, and

have confidence in its basic value to every architect, builder, and dealer. May we send you a copy? Kindly address Department K-16.



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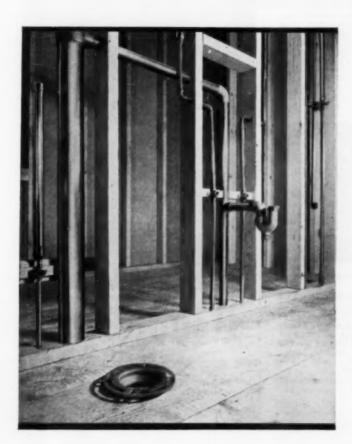




it pays to offer your clients
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an ALL-COPPER

DRAINAGE SYSTEM



The fact that modern conveniences help sell houses has been proven by builders and architects throughout the country. Many of these extras "leap to the eye" . . . built-in ovens, automatic furnaces, air conditioners, washer-drier combinations, even automatic garage doors. But a more basic convenience, and one that costs only a trifle in comparison, is an all-copper water supply and drainage system. By specifying Streamline® copper tube and fittings for drainage as well as for supply, you give your client an installation that will last the life of the building and will be free of the repairs and annoyances that plague old-fashioned plumbing. Streamline installations are free-flowing and practically clog-proof . . . there are no caulked joints to leak, no rust damage to worry the home-owner. In addition, you can show your client a beautiful smooth copper-and-bronze system that's as modern in appearance as it is in function. It may cost more to use copper throughout, but the extra cost is negligible in view of the sales appeal and practical advantages. Contractors often report that the finished job costs less with Streamline tube and fittings, because of the shorter installation time and the fact that our compact 3" stack fits into a standard 2" x 4" partition, eliminating the need for furring.

REMEMBER—The advantage of using all-copper Streamline tube and fittings is worth many, many times the small extra cost! Write today for information kit No. 15 containing the detailed story of copper for drainage.

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Once again, Roddiscraft makes history with doors. Once again, Roddiscraft makes history with doors. Cutaway model illustrates this dramatic new development — a one-hour flush veneered fire door (B-Label) in which the core is composed of millions of fireproofed wood particles . . . bonded forever with phenolic adhesives under heat and pressure. This all-wood fire door is fully approved by Underwriters' Laboratories, Factory Mutual and the New York Board of Standards and Appeals.

This new core construction is significant in terms of both present function and future promise — because it offers a sure, new way to tailor door characteristics to particular applications.

acteristics to particular applications.



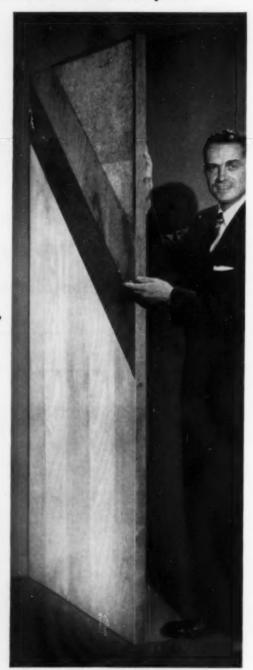
HIGH-DENSITY CORE -EXTRA STRENGTH -Weighs about 50% more than conventional mineral-core fire doors. Core assures exceptional screw-hold-ing power. Asbestos lock block position indicated on rail with golden dowel.

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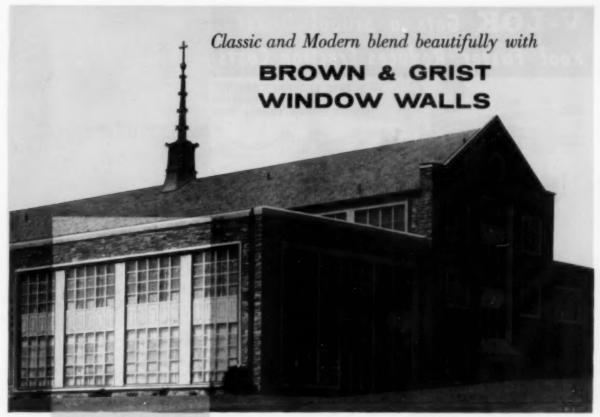
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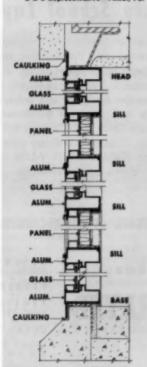
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easily assembled on the job, saving time and labor and it is 100 percent salvageable.

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JET ENGINE TEST CELL (High thrust)—An inner and outer set of double Jamison Sound Reduction Doors for extremely high sound levels.

Aircraft engine noise effectively minimized in test cells of all types

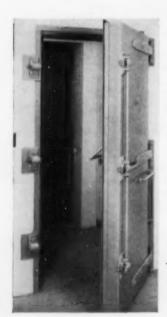
Jamison Sound Reduction Doors have become the No. 1 weapon in the increasingly important war against noise. For years Jamison has been furnishing Sound Reduction Doors to the Air Force and aircraft engine manufacturers for use in test cells for engines of all types. Today Jamison is the foremost supplier of doors scientifically designed to minimize sound.

Tests show impressive results

Jamison Sound Reduction Doors will consistently reduce sound by a factor of at least 50 decibels, based on the average results at 25 test frequencies over the range of 129 to 2070 c.p.s. The use of an inner and outer door shown above will almost double the sound reduction factor.

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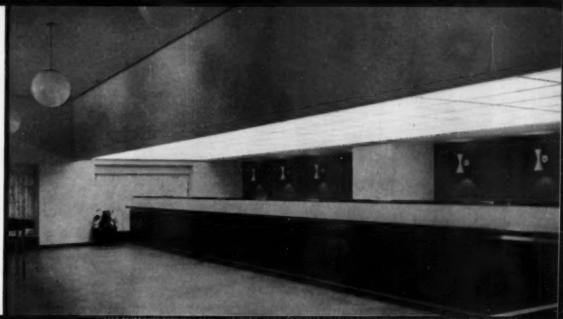
PERSONNEL DOOR

Jamison Sound Reduction Door in smaller size to accommodate pedestrian traffic.





- 45° and/or 60° light cut-off provides effective shielding
- Non-flammable and UL approved
- Weighs less than three ounces per square foot
- Free circulation of air prolongs life of light units
- Provides lowest surface brightness obtainable
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- May be cleaned with ordinary vacuum brush attachment







<u>Honeylite</u>—beautiful to look at and mighty easy on the eyes!

The efficiency and beauty of a Honeylite illuminated ceiling is unsurpassed. The thousands of hexagonal aluminum cells cast a shadow-free luxuriant light into every corner of the room. Honeylite diffuses and distributes light so discreetly and evenly that surface brightness is reduced to a minimum. In the soft, glowing light of such a room, working fatigue due to glare is eliminated — making Honeylite an ideal lighting material for use in schools, offices or wherever visual comfort is necessary to maintain day-long peak production. Specify Honeylite for your next lighting installation...whether used for louver-all lighting, in recessed troffers or individual lighting fixtures Honeylite is the most beautiful, most functional light diffusing material you can find anywhere!



HONEYLITE
(shown at right actual size) installation is simple, inexpensive. For full ceiling, aluminum T-bars are used to suspend HONEYLITE panels below lighting units. HONEYLITE is also ideal for use in troffers and lighting fixtures.



HONEYLITE

A development of HEXCEL PRODUCTS INC.
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Upjohn warehouse, Washington, D. C. Engineers and Builders: The Austin Company

Kawneer UNIT WALL

all the features you need for contemporary construction

The Kawneer Unit Wall is a creative tool for the architect in developing outstanding exterior walls. This system offers complete flexibility of design treatment through a wide selection of colors, unit types, and unit sizes, and the choice of proportions within the units themselves. Availability is assured through the stocking of "standard" wall and door units. The complete responsibility for the curtain wall is held by Kawneer alone. The features below illustrate the completeness of features for the ideal unit wall system.

MODULAR COMPONENTS. Standard units are provided in modular sizes. Special filler widths are available where required.

SPLIT MULLION DESIGN. Interlocking mullions provide for horizontal expansion and contraction.

CLEAN SIGHT LINES. Glazing beads for fixed each are recessed to be flush with the mullion, providing clean sight lines and unobstructed vision.

PUTTYLESS GLAZING. Vinyl weatherstripping throughout, reduces glazing time and provides a clean, permanent and easily replaceable glazing system.

NO EXPOSED FASTENERS. Units are assembled with concealed fasteners and glazing beads are installed by a positive toe-heel interlock.

FLUSH INTERIOR DESIGN. Interior face of mullion and muntin bars lie in the same plane, facilitating the installation of interior furnishings.

STANDARD DOOR UNITS. Factory assembled door units are offered as an integral part of the program and are interchangeable with wall units.

QUALITY SASH. Specially designed operable sash is provided with double vinyl weather seal and rugged lifetime hardware.

COMPETENT WORKMANSHIP. Closely controlled fabrication and assembly in the factory result in tight, accurately fitted joints and a high quality uniform finish.

RAPID INSTALLATION. A minimum number of parts handled on the job site and adequate provision for building tolerance insure simple, accurate installation.

Write for new 12-page detailed book on Kawneer Unit Wall System.



Sill, jamb and head framing members are attached, level and plumb. Wall units are attached through the top and bottom rail to the frame. No fastening is required through the mullion. Units are then glazed. No cover plates or loose parts are required.



Prevent wall crash accidents in gyms and class rooms!

Medart Attractive

SAFE-WAL

Rubber-cushioned Vinyl-covered

WAINSCOT

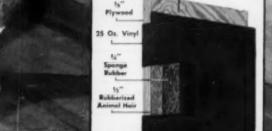
A new development-already proved in scores of schools everywheredesigned especially to guard against injuries from body impact against walls of multi-purpose play rooms and gymnasiums.

Sound-absorbing and sanitary, handsome SAFE-WAL costs no more than many types of hard surface wainscoting eliminates costly wall protective mats, tile or terra cotta facing. wood paneling,

> plaster, other wall finishes-is easy to install over rough walls-is resistant to dirt, grease and moisture-requires no

maintenance except occasional cleaning. Made in tan, green or gray.

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SPECIFY the best, then INSIST on it!

RED MEDART PRODUCTS CO., INC. 3540 DE KALB ST.

ST. LOUIS 18, MO.

OVERHEAD DOOR HOLDERS



that absorbs the shock of violent openings, avoids damage to glass, jamb, door, wall, hinges and other hardware and cuts down maintenance and repair costs.

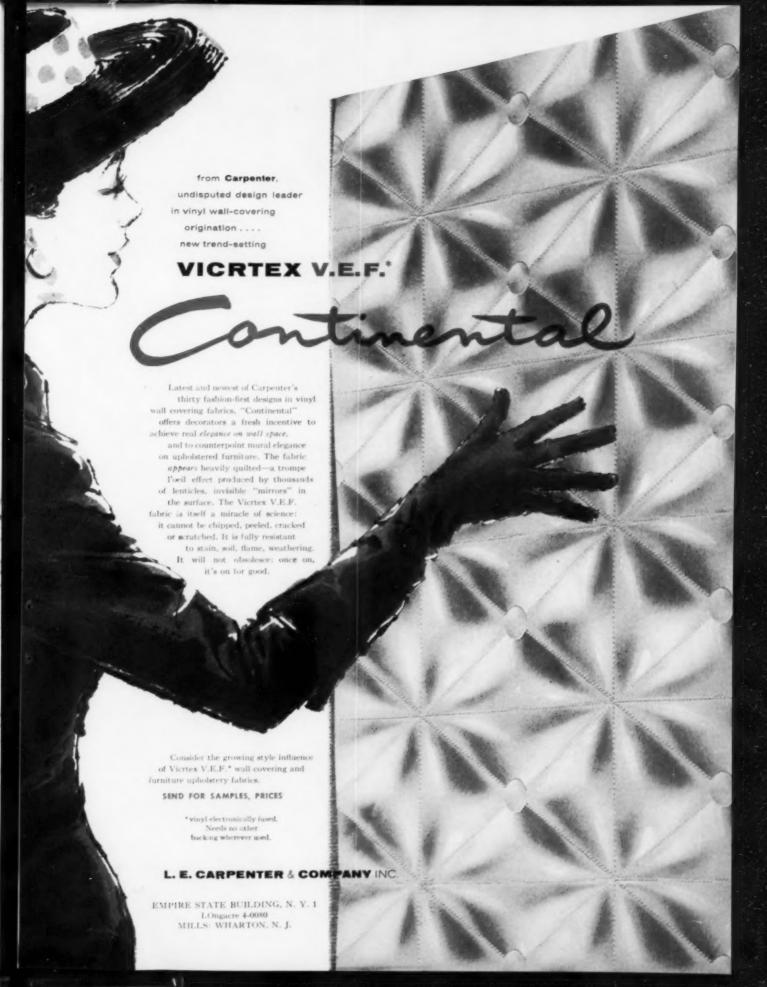


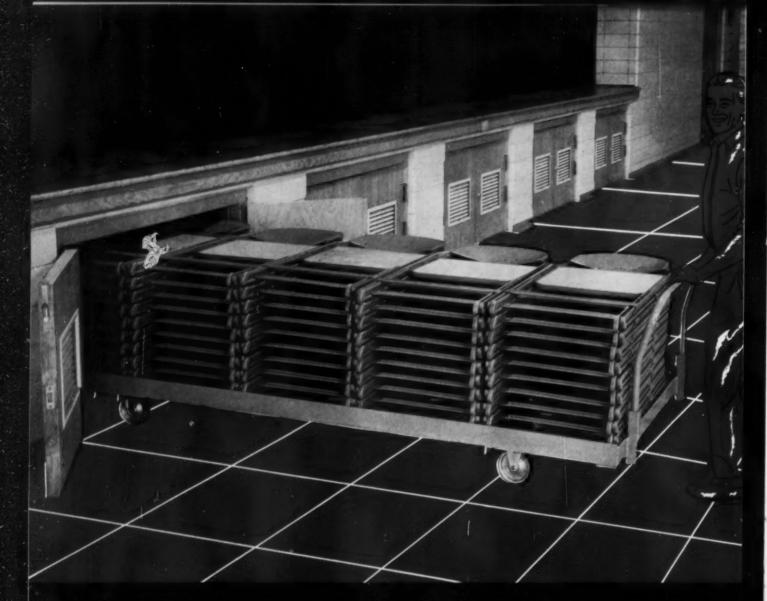
during heavy traffic—at school dismissal, factory or office "quitting" time or when the theatre lets out. Heavy wear and tear of continuous opening and closing of the door is avoided.



Wide choice of styles to meet varying budget and installation requirements.







CLARIN

FOLDING CHAIRS SIMPLIFY SCHOOL DESIGN SAVE SPACE... REDUCE COSTS

You can design more useable space into school buildings when you take advantage of the space saving capabilities of quality claun folding chairs. Due to its "X" type frame, the claun chair folds completely within its own 2" thick framework of extra strong double tube and channel construction. There is no protrusion to rob you of vital storage space. Now you can store more folding chairs in less cubic space than you ever thought possible

... use more of the allocated money for classrooms and building features.

Two important points to remember when specifying CLARIN folding chairs. I. CLARIN chairs are saje... will not fold when stood upon, but if overturned in panic, they fold automatically. 2. CLARIN backs your reputation with a written ten year guarantee. it's unequalled in the entire field! Write for complete information.

QUALITY IS THE ONLY TRUE ECONOMY ... AND



QUALITY SETS NEW STANDARDS FOR SEATING

Here's photographic proof
CLARIN folding chairs save storage space -





Whether stacked vertically or horizontally—
CLARIN chairs save 30-40% of storage space and handling equipment costs





SPECIAL PURPOSE CLARIN CHAIRS SOLVE VARIED PROBLEMS



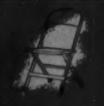
autic ROOM CHARL special affect for all music some purposes. Tables arm, ideal for busic theory. . folia away for instrument practice and cherel group folias.



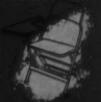
CAPSTORIUM CRASS
is kind where capstoria
is also used so auditurnum. Seat and back
pitch isony somfortalia
for extended use, fresh
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AUDITORIUM CHAIL provides maximum samfort for prolonged patting without reducing auditories attention floating for antice publitorium may be set up in short length of time



CAPETERIA CHAIR Erect pitch section that chair ideal for one is enfeterial, lunch rooms or at banqueta Keep stadems wested up to table. helps diguethe helps avoid slumping.

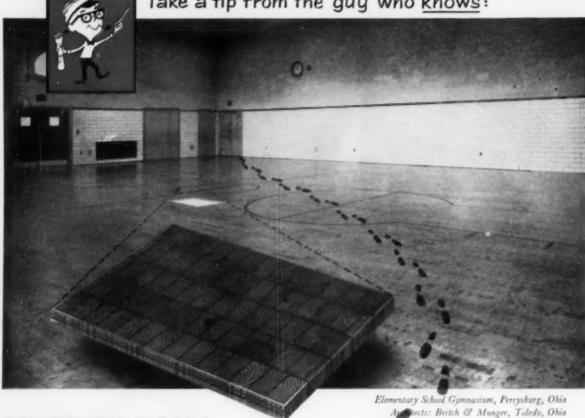


7ABLEY ARM CHARRAGE is on ideal cleans of the wings apare or arminer of the common are important for the common and the common and the common and the common common and the common commo

CLARIN MANUFACTURING CO.

Dept. 60 . 4640 West Harrison Street . Chicago 44

Take a tip from the guy who knows:



FOR SCHOOL FLOORS LAST A LIFETIME,

> The Jennison-Wright Corp.

2463 Broadway Toledo 9, Ohio

For nearly 50 years, Kreene Wood Block Floors have been used successfully in industrial plant areas where heavy traffic would ruin normal

Now, Kreolite offers this famour prability in its beautiful Flexible Strip End Grain Wood Block Flooring designed specifically for school activities centers like gymnasiums, vocational shops and laboratories.

Made from 1-1/2" or 2 thick kiln-dried southern yellow pine, individual blocks of Kreolit be wire-trussed together to form compact monolithic-like and grains are then imprograted with ks or strips. These strips are then impregnated with a special presentative to guard them against the ravages of time.

When the flooring is each Kreolite strip is interlocked to adjoining strips by a patented steel wire spline—providing a smooth, resilient floor that defies hard uses! For complete details, fill out the coupon below.

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Please send me a free sample and complete specifications of Kreolite Flexible Strip End Grain Wood Black Flooring.

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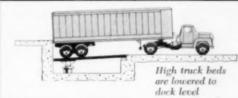
with Rotary Oildraulic, Lifts

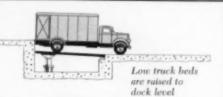


Truck Leveler saves dock space

This hydraulically-operated device takes no space and leaves the dock platform completely free of obstructions. Equips any dock to handle any highway carrier by leveling truck bed at dock height. Truck Leveler cuts loading time, provides maximum efficiency of dock operation.









Leva-Dock Ramp—Self-leveling ramp, recessed into loading dock, moves up or down automatically on hydraulic jack to stay level with truck bed. Provides safe runway for fast loading and unloading. Economical to operate.



Stage Lifts—In school design, stage lifts are often used to raise portion of gymnasium floor to stage height when needed, saving on construction costs. Also used in auditoriums, music halls, other entertainment centers.



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Dependable hydraulic operation . . . Capacities to 100,000 lbs. or more

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There's a Marlite Panel for every O. H. I. project!





Marlite Plank and Block

Exclusive tongue and groove joint speeds installation, lowers "in place" costs. Planks are 16" x 8'; Blocks are 16" square. Soilproof baked melamine plastic finish never needs painting; cleans with a damp cloth. Available in "Companion Colors" styled by Raymond Loewy Associates, plus distinctive wood patterns . . . all in soft lustre finish.



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Authentic reproductions of fine, fully-finished hardwoods and rare, imported marble. Woodpanels are 4' x 6' and 4' x 8'. Marble Panels are 32" x 48", 64" x 48" and 96" x 48" (grain runs in direction of second dimension). Baked melamine plastic finish resists heat, moisture, smudges, and stains. In addition to large sheets, most wood patterns are available in Planks and Blocks.





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Marlite Deluxe Hi-Gloss Panels

High lustre, mirror-like finish for easy maintenance. Plain and tile patterns available in a wide range of decorator colors. Large panels are 4' wide and in lengths to 8' Baked melamine plastic finish seals in the colorful beauty; stays like new for years. To get complete information on all Marlite products for your O.H.I. projects, see your building materials dealer, refer to Sweet's File, or write Marlite Division of Masonite Corporation, Dept. 1005, Dover, Ohio. FIBERGLAS

FRESCOUSTICAL TILE

Eyes-UP . . . to a unique new kind of ceiling tile-whose completely random, soft-stippled surface casts a graded shadow that helps conceal tile lines. Beautiful new Fiberglas* FRESCO* Acoustical Tile-with "Class A-Incombustible" Underwriters Rating-is a fire-safe, acoustically efficient solution to many ceiling problems. Fresco Tile is easily vacuum-cleaned . . . may be spray-painted several times without diminishing acoustical benefits (N.R.C. = .85 on No. 7 mounting). Fresco Tile is now available in two standard sizes-12" x 12", 12" x 24"—for all application methods. Write now for complete data on new Fiberglas FRESCO Tile-brochure AC6.C14. Owens-Corning Fiberglas Corporation, Dept. 68-J, Toledo 1, Ohio.

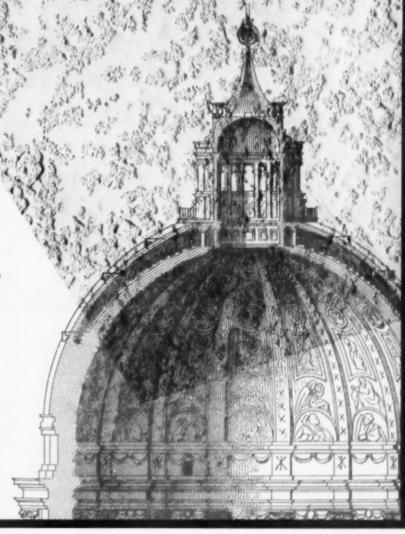
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ACOUSTICAL TILE—Fresco, Textured, Perforated, Sonofaced*, Stria* • CEILING BOARD — Textured, Sonofaced, Stria • Noise-Stop* BAFFLES.

*T-M. (Reg. U. S. Pat. Off.) O-C. F. Corp.





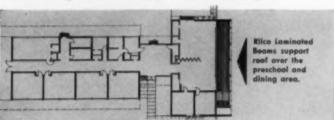


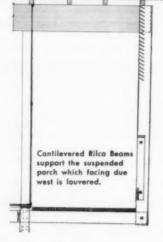
Rilco Beamed School Wins American Association of School Administrators Award

We don't know what part Rilco Laminated Beams played in winning the 1955 Award of Merit for the Tucker-Maxon School in Portland, Oregon. They must, however, have been instrumental in helping the architect to carry out this practical award winning design.

For graceful Rilco arches, beautiful beams, rugged trusses and four inch insulating cedar deck offer the warmth that only wood can give—warmth to the eye and warmth to the touch. And because each member is tailored to specification, Rilco imposes no design limitations.

Today Rilco Laminated Wood Members provide fire safety with less bulk to schools, churches, homes, factories and commercial buildings helping to fulfill new concepts of practical design for the architect. Rilco experience can be yours for the asking.



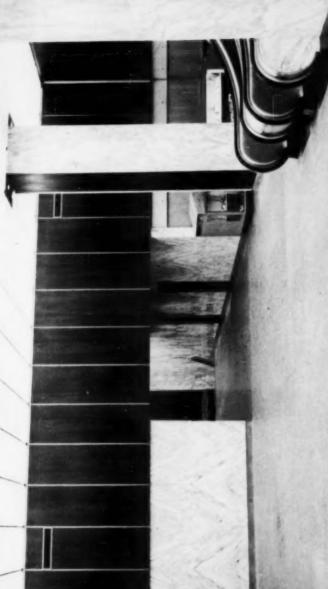




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No. 4 in a series

something Special by Curtis



ISLAND OF LIGHT

(another problem in which Curtis Designers and Engineers theleped find the solution.)

GENERAL INFORMATION:

The lighting installation shown at the left is the largest of the luminous ceiling elements designed and supplied by Curtis Lighting, Inc. for the three first-floor lobby areas of the Newark Center Building. Surface characteristics of this area are:

WALLS

	Honduran Teak	35 %	-
	Ivery tone	55%	-
	Terrozze	45%	-
METAL TRIM:	Satin Anished aluminum	75% #	-

THE PROBLEM:

To design a lighting system that would provide high-level illumination and reflect the clean, crisp modular form established by the basic architectural design.

Turn the page for the solution to this problem.

NEWARK CENTER BUILDING
NEWARK, NEW JERSEY

ARCHITECTS:

STEINHARDT & THOMPSON, NEW YORK WILLIAM E. LEMMAN, NEWARK

ENGINEER:
PRED W. SUTTON ASSOCIATES, NEW YORK

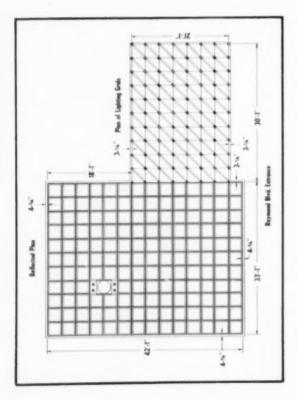
HTING, INC.

in Chicago 6135 W. 65th ST. CHICAGO 38, ILLINOIS in Los Angeles 242 S. ANDERSON ST. LOS ANGELES 33, CALIF.

in Conada

195 WICKSTEAD AVE. TORONTO 17, CANADA

ELECTRICAL CONTRACTOR: BEACH ELECTRIC CO., EAST ORANGE



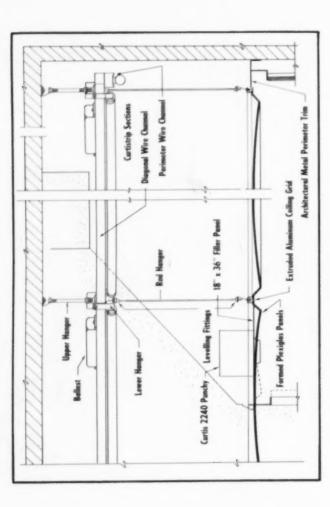




THE SOLUTION:

ment suspended from the structural ceiling, covering an area of 2,016 square feet. Designed The installation pictured on the preceding page is a specially designed luminous ceiling eleon a 3' module, the basis of this system is a specially constructed Curtistrip grid system.

to maintain even illumination of the element, is installed in continuous lines around the Fig. 1, a plan of the Raymond Blvd. lobby, shows how Curtistrip channels, using 40-Watt, T-12 Rapid Start lamps, are placed on the diagonals of each module. Supplementary lighting perimeter of the area. A partial reflected plan of the area is included. Fig. 2 is a north elevation of the lobby area showing the luminous ceiling element installed. Fig. 3 shows the hanger arrangement, used to suspend the entire element, which consists of



an upper and lower hanger. This suspension system was used to completely support the entire element from the structural ceiling, completely independent of any side wall juncture, making it a "floating" island of light.

Fig. 3 also details the diagonal and perimeter wire channel systems, and the placement of Plexiglas panels. To eliminate spill light from the area between the luminous element's edge and the wall, and between the edge and the column, metal "filler panels" were used. Curtis 2240 Punchy downlights were installed in the filler panels at the column.

illumination of over 90 footcandles, with brightnesses not exceeding 210 foot lamberts at This main lobby luminous ceiling element, specially designed by Curtis, provides an average normal viewing angles, and the solution to another lighting problem.



Teachers and students, supervisors and administrators agree... The SINGER Combination Table has something for everyone!

Teachers like the SINGER Combination Tables because they provide a complete sewing unit in one classroom item. They eliminate moving from machines to separate cutting tables . . . avoid bottlenecks . . . maintain order.

Students like the deep openings that accommodate their standard tote trays, and the 2 smooth-sliding drawers for handy storage. They appreciate the ample space to the left of the needle for full sweep of the garment being made. Supervisors and Principals like the way the SINGER Combination Tables adapt to a variety of classroom arrangements—wall alignments, island formations, U formations. And they like the modern, straight-line styling of the table, available in beautiful blond or dark wood to brighten up any classroom.

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For a free folder, giving specifications and suggested classroom layouts, just mail this coupon.



SINGER SEWING CENTERS

THERE'S ONE NEAR YOUR SCHOOL

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SINGER SEWING MACHINE CO.

Educational Dept., 149 Broadway, N.Y. 6, N.Y.

Please send folder giving details about Combination Sewing and Cutting Table, and showing suggested classroom layouts.

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Position	
School	County
Street	
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FORMERLY STERLING HARDWARE MFG. CO. • CHICAGO 18, ILLINOIS

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124



Fixtures for new Plainfield Trust Company branch by Marlou Lights, Inc., Fanwood, New Jersey. LUCITE extruded by Plaster Company, Columbus, Ohio.



• This "Quality Controlled" label may be used only by qualified extruders of Du Pont LUCKE acrylic resin. It assures the lighting industry that the extruded material conforms to standards for low shrinkage and uniform caliper established by E. I. du Pont de Nemours & Co. (Inc.).

The new branch of the Plainfield Trust Company in Fanwood, New Jersey, incorporates lighting that is both efficient and attractive. Fixtures of LUCITE acrylic resin are installed ophthalmically designed to diffuse light evenly with an absolute minimum of light absorption. The units create an inconspicuous diffused glare-free, yet bright illumination that makes for relaxed efficiency.

Panels of LUCITE are strong, durable, free from discoloration and dimensionally stable. In addition, LUCITE is light in weight, easy to handle and install.

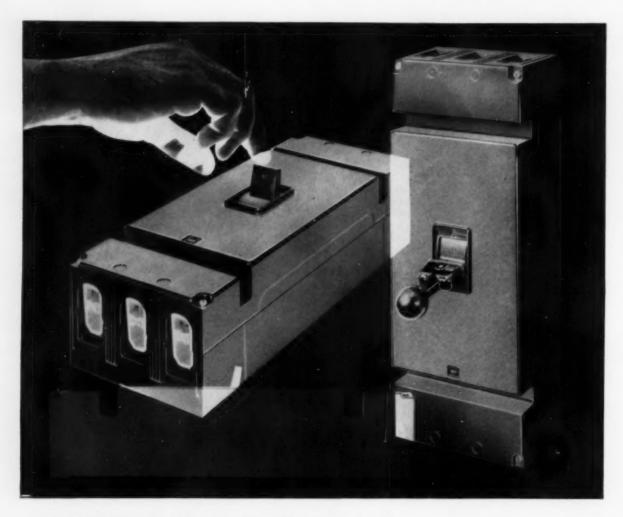
Because of these outstanding features, LUCITE is being utilized in practically all types of modern lighting installations: modular light diffusing panels, large-area lighting, low-brightness lenses for troffer and pendant luminaires, side panels, cove-lighting enclosures, and protective covers for outdoor lighting fixtures.

SEND FOR FREE, NEW BOOKLET. This new 12-page illustrated booklet describes all the latest property and application data on LUCITE acrylic resin for lighting. For your free copy, write E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department, Room 7310, Du Pont Building, Wilmington 98, Delaware.





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The Westinghouse Type M-only fully rated 800-ampere, molded-case circuit breaker...

Saves 3/4 cost of larger devices

Over a year of customer use, as an alternative to larger 800-ampere protective devices, has proved the economical advantage of the Westinghouse Type M AB De-ion® circuit breaker.

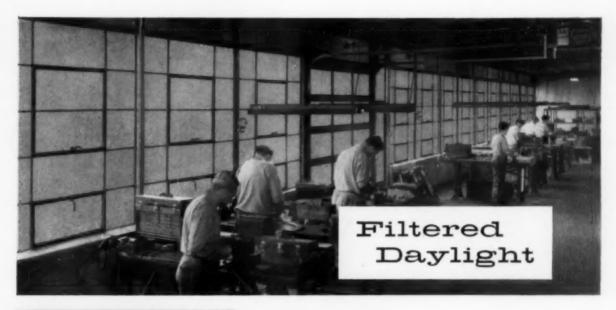
Whether you use it singly enclosed or in a switchboard, you'll find it can save ¾ the cost of a larger air circuit breaker. Space or mounting economies may run the savings even higher—such as the use of this design in building compact distribution panelboards.

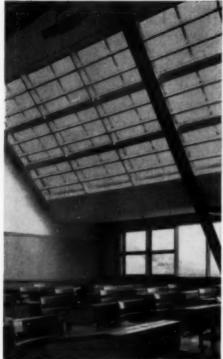
Though the smallest device of its rating, the new model will carry its full current rating in normal ambients even when enclosed—something other thermal devices cannot do. This feature of ambient compensation is useful in applications where standard units might unduly penalize system capacities. Both the Westinghouse true 800-ampere alternate and the standard thermal magnetic trip types are U.L. listed.

You owe it to yourself to get all the facts on the Westinghouse Type M circuit breaker. Get 'em today from your local Westinghouse sales office—or write direct to Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa.

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relieves eye strain and body discomfort

Frosted Aklo® Glass softens and diffuses transmitted daylight, reduces glare of direct sun, bright sky and dazzling reflections. Its subdued blue-green color is restful to the eyes.

Aklo Glass reduces solar heat. It absorbs sun heat as the light passes through, reradiating much of the heat back outdoors. Aklo Glass in 1/4" thickness shuts out as much as 44% of the sun's radiant heat energy.

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made by Blue Ridge Glass Corp. sold by Libbey Owens Ford Class Distributors







10 MILES of Stainless Steel Mullion Covers

To Beautify and Protect

New York International Airport Building

Mullion covers made of Armco Stainless Steel will give lasting rich luster to the attractive grid design of the new terminal building at New York's International Airport. If laid end to end, the stainless steel enframements for the International Arrivals Building would be 10 miles long.

Leading architects specify stainless steel for jobs such as this because it offers a combination of properties unmatched by any other architectural material.

High Strength—Building components of Armco Stainless Steel can be made to serve as combined load-bearing and decorative elements. Strength and rigidity simplify both design and fabrication.

Excellent Corrosion Resistance—The ability of stainless steel to withstand corrosion preserves the beauty and strength you design into your buildings. And over the years, it assures low maintenance costs for your clients.

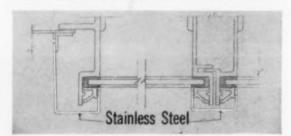
Handsome Appearance—The rich luster of Armco Stainless adds distinctive beauty to any design. Its neutral tone blends well with other building materials.

And now, new Ebonized Armco Stainless makes it pos-

sible to specify jet-black surfaces for contrast. Porcelain enamel on stainless offers unlimited color patterns to give you greater design freedom.

Consider these outstanding advantages of Armco Stainless Steel to give your modern curtain wall or traditional designs distinctive beauty and economical permanence. Let us send you complete information on the uses of Armco Stainless Steel in architecture. Just write to the address listed below.

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Take advantage of the latest developments in modern lighting design. In American Louvers, total absence of welding, riveting, and surface brightness means exceptional versatility. They may be employed as single, recessed, or surface mounted units, continuous runs, or any combination of modular patterns, including over-all ceilings.

AMERICAN -LOUVER

1240 NORTH SAVE

COMPANY

CHICAGO 34, ILLINOIS



Modern Decoration, Shadowfree Lighting with Acousti-Celotex Translucent Panels

Acousti-Celotex Acousti-Lux Translucent Panels are designed to transmit high levels of illumination as they provide a decorative self-ceiling. Interflectance between sections of Panel offers efficient diffusion characteristics; above-ceiling ducts and pipes, even dirt, dust or debris, cast no shadows because of excellent light diffusion. Other Acousti-Lux features:

• Low brightness—high visual comfort • Light sources entirely concealed • A "self-extinguishing" ceiling surface; will not support combustion • Carries Underwriters' Laboratories label • Long-lasting, durable panels with dimensional stability essential for translucent ceilings • Translucent panels and acoustical tile can be combined in a layout keyed to the needs of the areas • Easy maintenance; convenient size for washing, instant removal for access to light fixtures or other above-ceiling utilities • Available in a wide variety of attractive patterns.

ACOUSTI-LUX PANEL—Fabricated of two spaced layers of white vinyl sheeting specially developed for translucent ceilings. Provides excellent balance between high light transmission value and uniform diffusion. 24" x 24" size is ideal for installation efficiency, maintenance ease and integration with Acousti-Celotex Sound Conditioning Tile.

FOR COMPLETE DETAILS on Acousti-Celotex ACOUSTI-LUX*† and LUMICEL* Translucent Panels and Sound Conditioning Tile, write to The Celotex Corporation, Dept. B-106, 120 S. LaSalle St., Chicago 3, Illinois.

Pat. Not. 8, 218, 892 4, 2, 10, 319

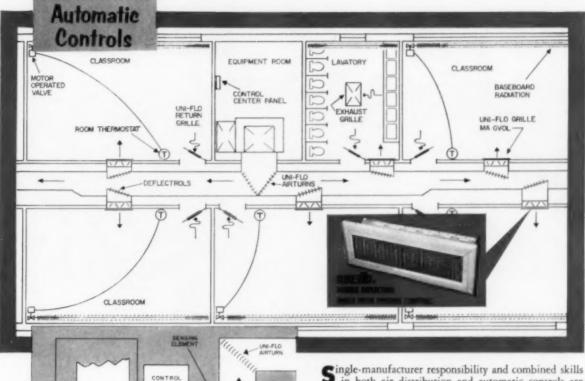
ACOUSTI-CELOTEX Sound Conditioning

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help you get best results with
"split-system" heating and ventilating



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Air handling unit, controlled by electric-electronic Control Center. Single-manufacturer responsibility and combined skills in both air distribution and automatic controls are available only at Barber-Colman. They help you insure superior comfort and health conditions with the highly flexible "split system." Heat losses are offset with radiation controlled by fast-acting electric thermostats governing motor-operated valves in the hot water supply line. A compact electric-electronic Control Center controls ventilation to provide tempered air by positioning outdoor and return air dampers, and heating coil valve in sequence. Cooling is provided through use of outdoor air. Uni-Flo MA Double Deflection Sidewall Diffusers provide maximum aspiration and complete control of air discharge without "air drop." Efficiently designed Air-turns and Deflectrols help assure uniform air supply at all diffusers. The combined efficiencies of the electricelectronic control system and proper air diffusion permit the maximum use of outdoor air for cooling in schoolroom ventilation. Phone your nearby Barber-Colman Field Office or write for details.

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ARCHITECT: VICTOR GRUEN ASSOCIATES, LOS ANGELES, CALIF.

AIR CONDITIONING CONTRACTOR: YORK CORP., CHICAGO, ILL.

McQuay Units at Dayton's Southdale to re-use cooling water for heating

A unique heating and air conditioning system will keep Southdale, Minneapolis' newest and largest regional shopping center, a comfortable 70° inside the year 'round. This installation marks the sixth time McQuay equipment has been used by Dayton's, one of the country's outstanding department stores. Thirty-one compact McQuay "HC" units suspended in the ceiling along outside walls will compensate for perimeter heat loss near glass areas and at roof level.

Twenty-one ceiling mounted McQuay "AC" Seasonmaster units in the center of the main store will provide cooled air to offset heat from large crowds of shoppers, lighting and interior equipment. By automatic control of the two systems, a constant, uniform temperature of 70° is maintained regardless of whether outside temperature is a frigid -25° or a torrid 100° .

Well water of 48° to 50°, brought up from 600 feet below the ground, is circulated through the condenser. Then at a temperature of 70° to 90°, it is pumped underground to another natural reservoir. This water retains a percentage of its heat and is used again the following winter for heating. After being used for heating, the water is returned to the cold water source. It is anticipated that the heating cycle will become more and more efficient each year.

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HEATING . AIR CONDITIONING . REFRIGERATION



you can **BUILD** and **SELL** more house . . . at lower cost with

With home buyer's increasing demands for major features, like ample storage space—and the design and cost problems of supplying them . . . architects and builders are doing some careful figuring.

Specifically, lets consider more, easy-to-use storage space, and how to create it with GLIDE-ALL Sliding Doors . . . easily, quickly and economically:

GLIDE-ALL Doors make floor-to-ceiling, wall-to-wall expansive wardrobes, huge closets in corners of small rooms, full-length, full-height hallway storage space, entrance-way guest closets, and in many other waste-space areas. GLIDE-ALL Doors save construction time and dollars . . they're installed quickly, adjusted easily to fit the opening, decorate with the wall, and give a life-time of trouble-free performance. They are available in standard 8' and 6'8' heights, flush or recessed panel models . . . and in special sizes for unusual jobs. That's why we say: "you can build and sell more house at lower cost with GLIDE-ALL Sliding Doors." See Sweets or write for complete details, specifications and prices.

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Minnesota Mutual Lite Insurance Company's gleaming new Home Office Building is the result of the combined efforts of the company's planners, the architects and the builders to couple modern beauty with top efficiency. It is said the now-completed structure is the most efficient physical plant that could be designed for the complex operations of this growing organization.

A significant phase in the effort to obtain the utmost in efficiency and dependability was the installation of USS NATIONAL Steel Pipe for the hot water heating and snow melting systems of the handsome new structure. Over 7000 feet of ¾-inch National. Pipe were used in the snow melting system, alone.

The consistent selection of National Steel Pipe for the "big jobs" is nothing new. For over 60 years National has been the accepted pipe for plumbing and heating systems. Regardless of the application, architects, builders and contractors know from long experience that they can put their complete confidence in the uni-

form, dependable performance of NATIONAL Pipe. Plan on using America's Standard Wrought Pipe in your next installation.



The snew melting system being installed, All 3/4-inch lines and 2-inch headers were of NATIONAL Steel Pipe.

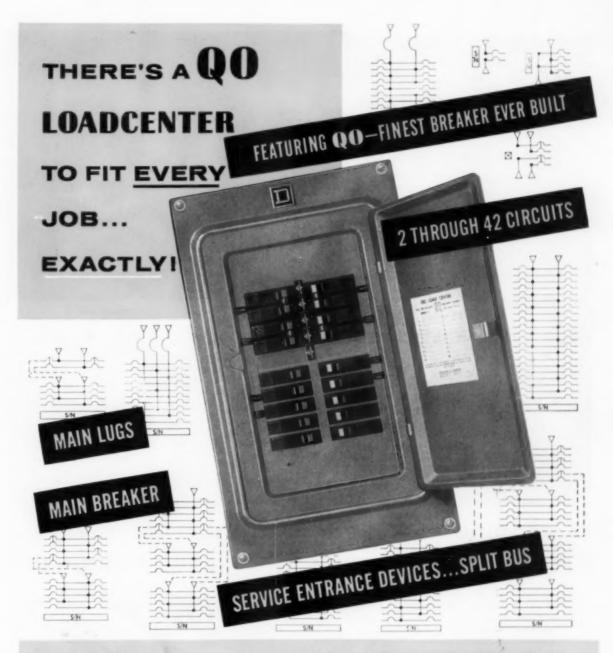
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MODINE AIRditioners provide quiet, personalized air-conditioned comfort 365 days a year for any room with a turn of the switch. And this fingertip control enables occupants to feel comfortable instantly—without unpleasant air blasts. What's more, Modine styling blends units with any design . . . be it traditional or contemporary, new construction or remodeling job. In addition, Modine AIRditioners dehumidify, clean and circulate fresh air for maximum enjoyment. They're ideal for air conditioning existing buildings, replacing unsightly radiators with smart heating-cooling units.



NO EXPENSIVE DUCTWORK is needed with Modine AIRditioners. Same water supply and return piping, plus drain, is used for both central boiler and chiller.



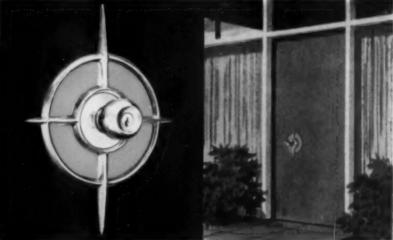
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Ask the Modine representative listed in your classified phone book for Bulletin 755—or write Modine Mfg. Co., 1510 DeKoven Ave., Racine, Wis.

HUZDITIONES *



A tasteful focal point for the traditional entranceway -Continental on horizontal with 18" backset.



Continental escutcheon (11° x 8°) shown with Saturn design lock. Color background is paint.

The modern exterior subtly complemented by a vertical Continental with 10" backaet.



Functional harmony for an unusual doorway. Horizontal Manhattan with special backset.



Manhattan escutcheon (8° x 4%') shown with Tulip design lock. Color background is vinyl plastic.



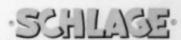
Colorful double door motif for the dramatic entrance – twin vertical Manhattans with 7" backsets.

"Color-accent" LOCK STYLINGS - A NEW ENTRANCEWAY DECOR

To the architect, Schlage's open-back "Color-Accent" lock escutcheons offer opportunities for integrated doorway designs that have never existed before. Behind the open-back of the circular Continental or the rectangular Manhattan, the variety of colors and textures that can be introduced are numberless... the design applications which they

can serve are as limitless as the architect's creative originality.

Send for New "Lock Fashions" Brochure #851 A-10 For colorfully illustrated applications of the new "Color-Accent" concept and complete information on Schlage residential lock and escutcheon designs, write today for this 4-color, 12-page brochure.

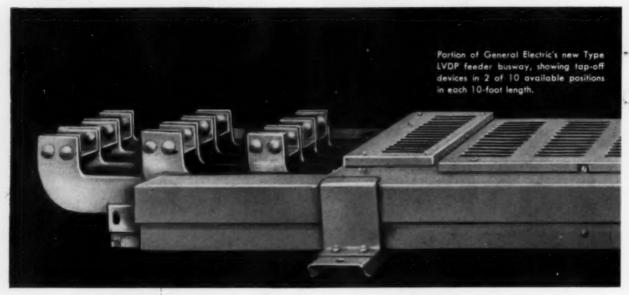


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New development from General Electric

Plug-in Flexibility + Low Voltage Drop + High



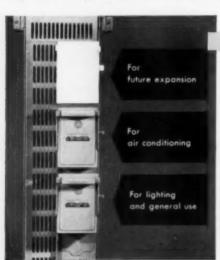
New plug-in busway, with tap-offs at one-foot intervals, carries large blocks of power (600 to 4000 amperes) with virtually no voltage drop penalty!

A major advance in busway design, the LVDP busway lets you . . .

- install a primary feeder system at less cost than ever before
- · lower (and aften eliminate) subsequent relocation expense

Industrial plants can now relocate tap-off connections in minutes instead of hours. If equipment such as welders must be moved (no matter how frequently), you merely disconnect your plug and reinsert it at a more convenient place—almost as easily as you do with your toaster at home. You do not have to disassemble and reinstall major busway sections as before.

Commercial buildings are no longer limited to one tap-off per floor. You get the convenience of individual metering for each tenant without adding extra equipment. As requirements grow, you can increase power available to each floor by simply plugging in additional tap-offs.



LOWER INITIAL COST

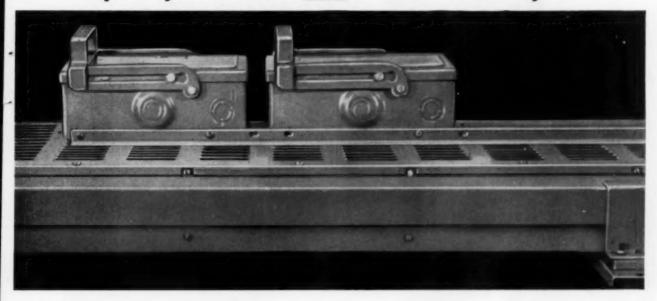
Eliminate hard-to-install cable tap-off box and separate protective device and substitute a simple plug-in combination tap-off and protective device.

LOWER REMODELING COST

Now you can relocate equipment or add new equipment without doing anything more than unplugging the tap-off and reinserting it at a more convenient place.



Capacity-Now in One Feeder Busway!



PLUG-IN FLEXIBILITY: Rated from 600 to 4000 amperes, the Type LVDP plug-in busway comes in ten-foot sections, each with ten tap-off points for subfeeding through standard General Electric Flex-A-Plug* switch units. Outlets are shielded to prevent accidental contact with bus bars.

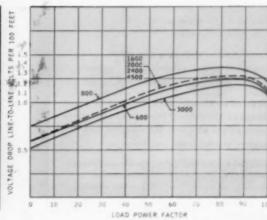
LOW-COST INSTALLATION: LVDP sections match up with G.E.'s Type LVD feeder busway (similar low-voltage drop, same capacity). When plug-in flexibility is desired, use the LVDP. When no taps are needed, you can select lower-cost LVD busway—straight sections, turns and end boxes.

*Registered trade-mark of The General Electric Company.

Call your General Electric representative and have him give you all the facts for your next job.

Or write Distribution Assemblies Department, General Electric Company, Plainville, Conn.





Between the point at which power is brought in and the end of the main feeder, voltage drops of eleven percent and more frequently occur, as shown by a recent survey. The chart at left shows the extremely low voltage drop of General Electric's new Type LVDP plug-in busway with aluminum conductors.

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— a revolutionary development in a folding door at moderate price! Laminated vinyl surface.

features

The Grant Folding Door has crisp clean lines, blocks sound, hangs rigid without billows or rustle. No bellows action. Knock on it. It sounds and feels like a door!

Frees Floor Space: an average of 14 square feet of floor space (19 square feet of wall space) for living uses, better arrangement of furnishings.

Vinyl Surface: tough and long-wearing, permanent color, resists scuffing.

Can be wiped with a damp cloth—scrubbed if necessary.

Easy Installation: only a screw driver is needed to install in standard door openings. Readily adaptable to non-standard openings.

Decorative Flexibility: color styling, design of handles and other details by famous Paul McCobb. Harmonizes with modern or traditional interiors.

Free: ask for your copies of descriptive specifications booklet and swatch book of available colors of textured, non-scuffing vinyl fabric surface material.

Grant folding door

is another opportunity for better construction with GRANT

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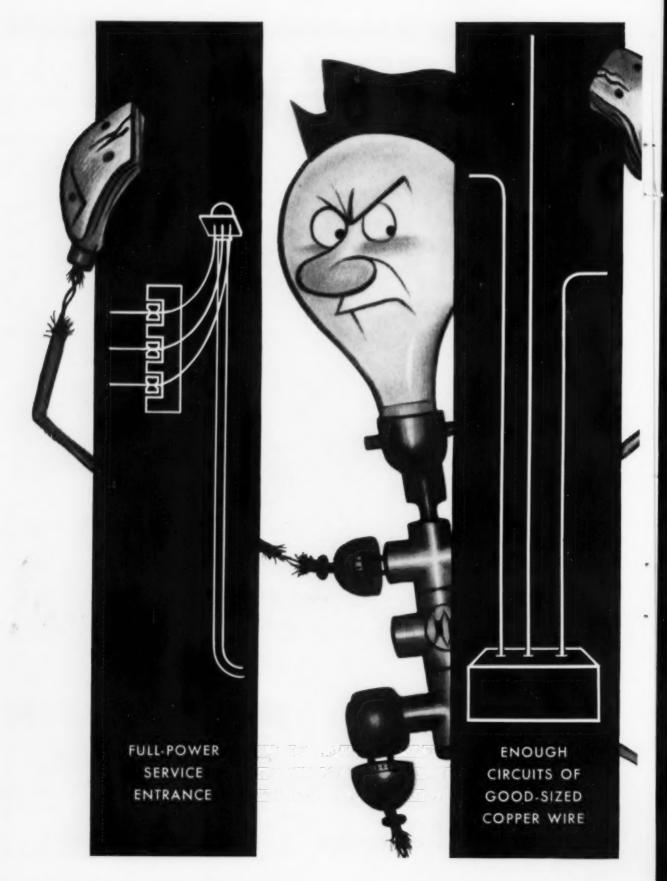
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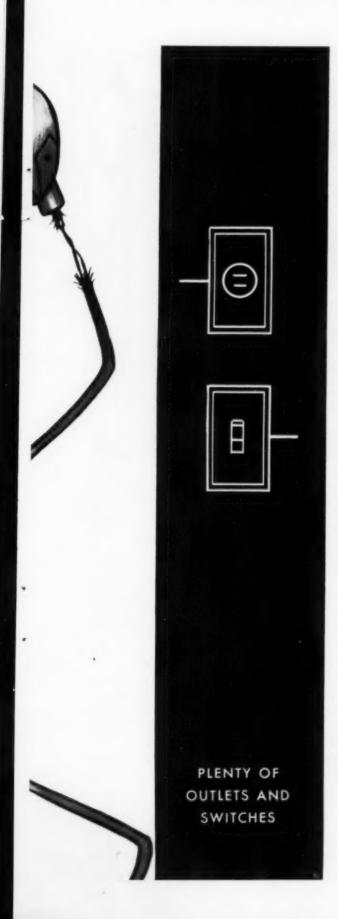
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- Full-powered service entrances of at least 100 amperes. (The minimum NAHB voluntary standard.)
- 2) Enough circuits of large enough copper wire to power every appliance used, even when other appliances are operating on the same line. Extra circuits, too, for the house to "grow on."
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FREE HOME WIRING WALL CHART! Send today for Kennecott's handy wall chart showing typical home circuit loads. Use it as a check list when planning electrical systems. Write Kennecott Copper Corporation, Dept. A 106, 161 E. 42 St., New York 17, N. Y.



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Here is a lighting unit that does something about room temperatures, too! The new 2-in-1 Benjamin Multi-Vent Trofferlite delivers both the most modern illumination and improved air diffusion from the same fixture at a decided cost saving. It brings you well-diffused, adequately-shielded Benjaminengineered light conditioning, in combination with a new advance in gently-diffused, draft-free air conditioning. Ceilings take on a modern, uncluttered look because air diffusers are concealed inside the clean-lined troffer lighting units. Installation costs dip way down, as the 2-in-1 feature reduces the number and variety of fixtures required. Wherever light and air conditioning are needed, specify Benjamin Multi-Vent Trofferlites to make the job simpler, the design more beautiful, the air conditioning more successful and the cost much lower! Send for FREE illustrated 8-page Data Brochure. Write Benjamin Electric Mfg. Co., Dept. Q-1, Des Plaines, Illinois.

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Now — Advanced Benjamin Light Conditioning
PLUS Greatly Improved Air Conditioning from one unit!

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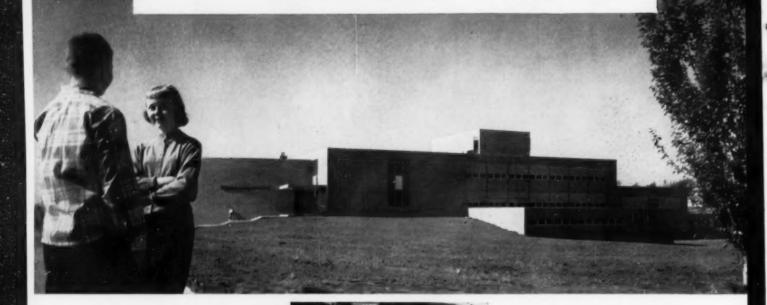
Improved draft-free air conditioning!
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2 - IN - 1 LIGHT AND AIR DIFFUSION SYSTEM
Trofferlite by Benjamin Electric Mfg. Co. - Multi-Vent® Air Diffuser by Pyle National Co.

The Modern Approach to School Planning ... GET MORE COMFORT PER DOLLAR, SPEND LESS FOR HEATING



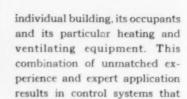
Increasingly high comfort standards, on the one hand, and pressure to reduce operating expenses, on the other, have centered interest on the importance of automatic temperature control. For

both comfort and the cost of comfort in today's schools are determined largely by the efficiency of the control system.

In the impressive new Edison Junior High School* progressive school planners have demonstrated how it is easily possible to stress economy while making exceptionally complete provisions for student and teacher comfort. Some of the highlights of this up-tothe-minute comfort control system are shown by the accompanying photographs.

Those who subscribe to the modern idea of getting more comfort per dollar know that Johnson offers the most practical means of achieving it. The Johnson organization has over 70 years' experience in solving the temperature regulation problems of schools-more specialized experience than anyone else!

Johnson engineers apply this experience specifically to your individual problems-each Johnson System is designed and installed to meet the exact needs of the



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*Edison Junior High School, Sioux Falls, South Dakota. Harold Spitznagel & Associates, architects, Sioux Falls; Homer Bird, mechanical engineer, Minneapolis; Carlson & Glasgow, mechanical contractors, Sioux Falls.

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UNIFORM AIR DISTRIBUTION is essential to consistent comfort. Opening and closing of dampers as air is discharged at various points throughout the building could result in too little ventilation in some rooms, too much in others. Here, behind the scenes, Johnson Static Pressure Regulators keep the entire ventilation system in perfect balance and insure even air distribution at all points.

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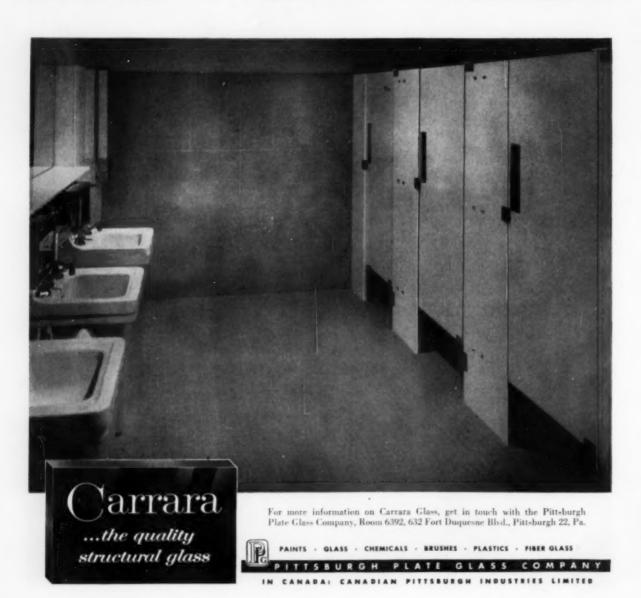
Right in keeping with the modern design in present-day architecture is Carrara® Glass, itself a truly modern structural material. Carrara Glass has a rich, yet simple, beauty that adds a note of distinction and beauty to every building in which it is used. Its surface is ground and polished to a high degree of lustre and sheen.

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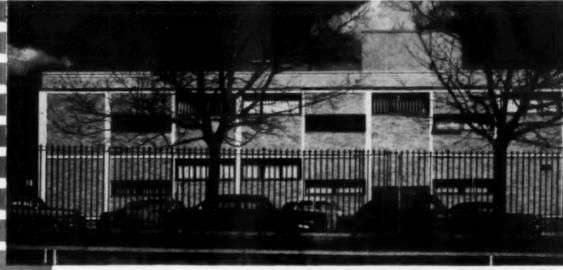


Twenty-eighth Church of Christ Scientist, located in Westwood, California, was designed by Maynard Lyndon, FAIA, of Los Angeles, California.



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BUT ECONOMY IS IMPORTANT



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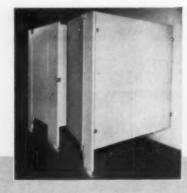
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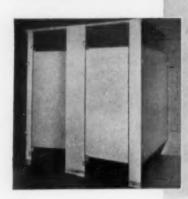
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There's no need for your installation charges to get out of line. Nicholson Toilet Compartments are designed and constructed for rapid assembly and easy adjustment to location contours.

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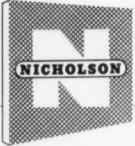
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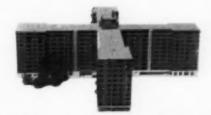


An apartment building with all-aluminum skin

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Preject: Chetwynd Apartments - Lecation: Radnor Township, Delawate County, Pa. - Architect: Charles Frederick Wise, A.I.A. - Bractimal Engineer: Severud-Elstack Kroeger - Mechanical Engineer: Ginsburg & Smith - Contractor: Rosemont Construction Company - Meight of building: 10 apartment floors and lobby - Number of spartments: 320, 32 per floor - Other Lacilities: Garage for 160 cars, restaurant, and cocktail lounge - Fleer area: 31.730 sq. ft. per floor

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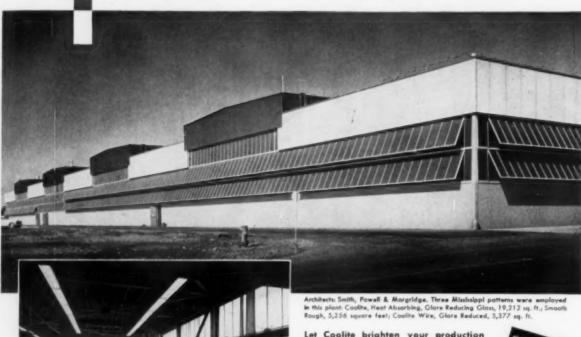
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Coolite Installed in Top Hinged Windows Floods Factory with **Conditioned Daylight**

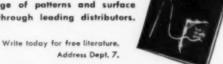
Excellent ventilation and plentiful, eye-easy, natural illumination promote employee efficiency and morale in this United States Electric Motor Plant, Anaheim, California. The hinged windows are glazed with Coolite, Heat Absorbing, Glare Reducing Glass to provide the finest, low-cost daylighting.

Coolite diffuses better light deep into interiors, eliminates contrasts that cause costly visual errors. Coolite absorbs up to 50% of unwanted solar heat rays, helps keep work areas cooler. Employees see better, feel better, work better, under "Cooliting."

This outstanding plant also uses diffusing Wire Glass for excellent daylighting plus protection against breakage and fire in vulnerable areas. Installed in doors, windows, skylights, Mississippi Wire Glass (Approved Fire Retardant No. 32) helps to bottle up small fires . . . keep them from roaring into costly conflagrations.



Let Coolite brighten your production picture with better daylighting. Specify glass by Mississippi. Available in a wide range of patterns and surface finishes through leading distributors.







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ROLLED, FIGURED AND WIRED GLASS LARGEST MANUFACTURER



- · Completely controlled closing through 180°
- · Any combination of closing and latching speeds
- "Silence Adjustment" for noiseless closing at any speed
- · Fully-automatic, built-in hold open adjustment
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You can meet any installation or operational requirement perfectly with the COR-BIN "400" Door Closer. It's completely adjustable through 180° . . . always closes exactly the way you want - even on extra heavy doors, or doors subject to strong drafts. What's more, every part is built to withstand the most severe conditions rack, pinion, cylinder, piston - all are precision machined. And there's no sacrifice of compactness for performance. This modern, streamlined closer projects only 13/4" from the door face! The CORBIN "400"

P & F CORBIN Division

The American Hardware Corporation New Britain, Connecticut

is used on doors in schools, hospitals, offices and public buildings the world over. For beauty, versatility, and top performance, specify the "400".

CORBIN Unit Locks The locks that come practi-

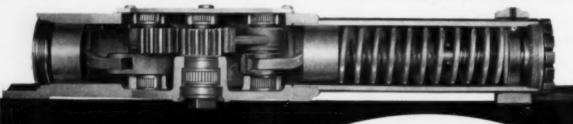
cally "pre-installed"! Factory-assembled on single-piece frome. Easy one-piece installation without martising. Any one of 20 available functions slips into simple cutout in door. Smooth, trouble-free performence unequaled by any other lock,



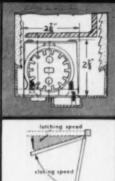


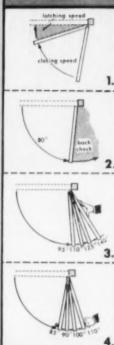


IN A TIGHT LED AMB?



over the ove





fits in 3" square with room to spare
(inside dimension of head jamb)

overall only 21/8" x 21/8" x 17" long

The most compact of all concealed overhead door closers. Ideal for installations where modern shallow head jambs are specified.

ALL the controls are built-in...

1, two closing speed adjustments

The closing speed from open to approximately 15° is controlled by one adjustment and the latch speed from 15° to closed position by another.

2. hydraulic shock absorber (back check)

At approximately 80° a hydraulic resistance starts to slow down or check the opening action of the door. Hydraulic back check optional.

3. spring cushion door stop

Door is "cushion stopped" at choice of any one of four factory-set positions 95°, 110°, 125°, or 140°. Stop removed for wider openings to 160°.

4. built-in door holder

Where specified—built-in to hold door at choice of 85°, 90°, 100°, or 110°.

Three sizes for center hung and butt hung installations.

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RIXSON



Photo by Hedrich-Blessing, Furniture by M. Singer & Sons

America's newest, smartest hardwood floor

Its striking new Midnight Finish has won the enthusiastic approval of architects, decorators and home buyers for Bruce Fireside Plank. Alternating 2¼" and 3¼" strips of solid oak create the charm of expensive random-width plank . . . with wide, shallow sidebevels to emphasize the interesting, casual effect.

While high in style, Bruce Fireside Plank is low in price . . . in fact, costs little more than a regular strip floor. It's completely finished at the factory for beauty, durability and on-the-job cost savings. Write for color booklet. See our catalog in Sweet's Files.

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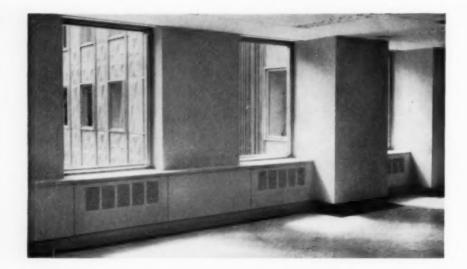


Bruce Fireside

SOCONY MOBIL BUILDING New York City

ARCHITECTS:
Harrison & Abramovits
John B. Peterkin
BUILDER:
The Turner Construction Co.

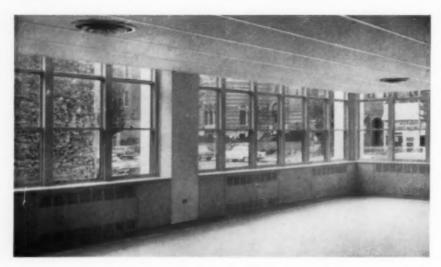




TEMPLE UNIVERSITY (Addition) Philadelphia, Pa.

ARCHITECT:
Skidmore, Owings & Merrill
ASSO. ARCHITECT:
James A. Nolen, Jr.
BUILDER:
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POMEROY'S NEW SERIES-7 STEEL ENCLOSURES...

smarten interiors ... cut construction costs

Style, construction and flexibility in design make POMEROY'S NEW SERIES-7 Enclosures the choice for today's buildings. Custom built in continuous or single unit runs, Series-7 Enclosures possess exclusive features that affect economies in modernization work as well as in new building projects. For your next project—large or small—call POMEROY.

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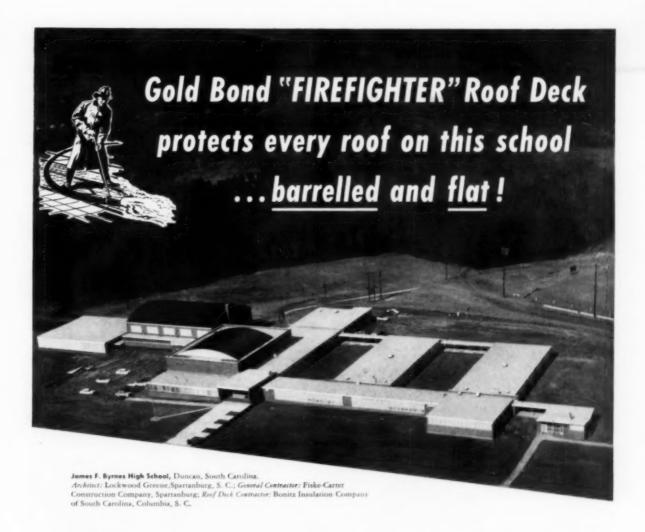
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DOUBLE-HUNG WINDOWS VERTICALLY PIVOTED WINDOWS CUSTOM-BUILT ENCLOSURES

SPANDRELS SYSTEMS ACOUSTICAL CEILING SUSPENSION SYSTEMS

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FABRICATION IN ALUMINUM - STAINLESS STEEL and COATED STEEL



THE 70,000 square feet of roof area on the James F. Byrnes High School is protected from fire with economical Gold Bond "Firefighter" Roof Deck. This also includes the walkways which extend from building to building. Wherever you go, you are protected by a roof deck that is naturally fireproof. The poured gypsum concrete deck can't burn!

Econacoustic Formboard, which was used on this school, insulates and sound-conditions the class-rooms, gym and auditorium. And there are other Gold Bond Formboards available that can be varied according to specifications: Gypsum Formboard specially treated to resist mildew; Insulation Form-

board that resists fungus and termites; Asbestos-Cement Formboard for additional fire-resistance.

Gold Bond "Firefighter" Roof Decks are adaptable to the barrelled and flat roofs on the Byrnes High School as well as being a practical covering for pitched roof designs. Up to 30,000 sq. fi. may be poured in just one day... and full load roof capacity is possible within an hour! Low dead load permits lighter supporting structures to be specified and saves on actual construction costs.

See how Gold Bond "Firefighter" Roof Deck can add safety and economy to your building designs. Send in the coupon below for full details. National Gypsum Company, Buffalo 2, New York.

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BUILDING PRODUCTS

"FIREFIGHTER"
GYPSUM ROOF DECK

NATIONAL GYPSUM COMPANY

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with com	iplete details on ''l	Firefighter" Roof Decks
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New . . . for poured, lightweight roof decks-

EXCLUSIVE FULL



Acoustical officiency is given Armstrong Formboard by full random perforations—drilled holes %ie" and ¼" in diameter. Noise-reduction coefficient of .55 results in efficient noise quieting. High insulation value is furnished by light-density fiber-board composition. Armstrong Acoustical Formboard has a certified "C" value of 0.36 Btu at 75" mean temperature.

High light reflection of 78% brightens building interiors. Factory-finished white surface is easily maintained, can be repainted if desired without loss of acoustical efficiency.

High strength results from twolayer lamination. Upper ½" is composed of Temlok fiberboard, made extra strong by asphalt impregnation. "Ceiling side" is ½" Cushiontone acoustical material. Vepor permeable insulation board and laminating adhesive allow free escape of moisture for proper slab curing. Adhesive has been specially formulated to retain its strength when wet.

No splines or cross tees are needed with Armstrong Formboard. Extra strong T and G joint will adequately support weight of roof deck. Narrow bevels give ceiling neat look. RANDOM BEAUTY

in

Armstrong Acoustical **Formboard**

When you use the new Armstrong Formboard with lightweight, poured-in-place roof construction, you automatically get a ceiling that's both decorative and sound absorptive. The "ceiling side" of this modern building product is Armstrong Cushiontone® acoustical material, finished with factory-applied white paint and perforated with exclusive design in Armstrong Full Random*. This is the same design that was introduced in Armstrong Cushiontone Acoustical Ceilings - and achieved immediate acceptance. Now its introduction to the formboard field allows you to make beauty a part of poured roof deck construction.

On your next poured roof deck job, gain the advantage of an attractive, noise-quieting ceiling - along with strength, insulation, and vapor barrier-all in one material. Specify Armstrong Acoustical Formboard. It comes in easy-to-handle 24" x 48" boards, 1" thick. * Trade-Mark

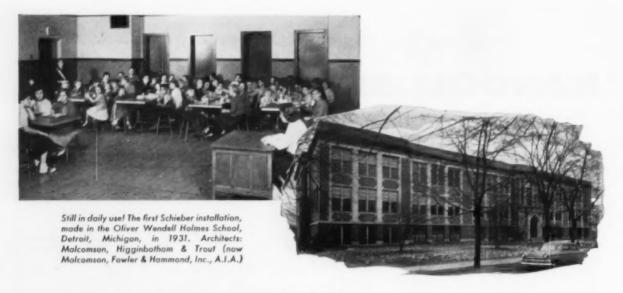


ROOF INSULATIONS

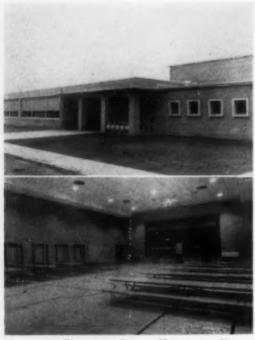
TEMLOK® ASPHALT-IMPREGNATED TEMLOK ACOUSTICAL FORMBOARD

For a free booklet that gives the complete story of Armstrong Acoustical Formboard, see your nearest Armstrong office or write Armstrong Cork Company, 3810 Rock Street, Lancaster, Penna.





HERE IS EVIDENCE OF QUALITY THAT CAN NOT BE DISPUTED!



Avenue A. Elementary School, Hutchinson, Kansas Architects: Mann & Company, A.I.A.

Schieber takes great pride in the fact that school architects who have specified their equipment once and have had experience with it specify it on subsequent jobs. The use, not only of quality components, but Schieber's engineering thoroughness, knowledge of the rigors of school usage and employment of precision jigs and fixtures in manufacture are contributing factors to the building of products that have stood the test of time.

Write or ask your Schieber representative for our complete detail and specification book.



Consult Sweet's File for further information on Schieber Folding Tables and Benches as well as the new Schieber-Haws Folding Partition





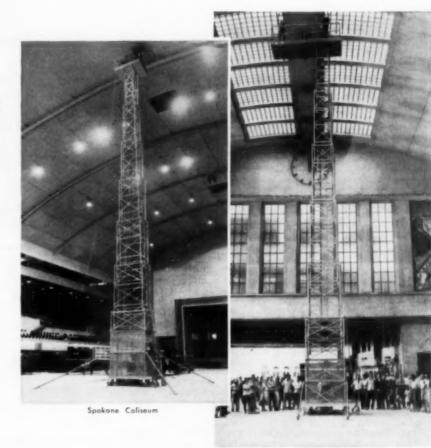






Economy Hi-Reach Telescoper. Spokane Coliseum Platform lift 65'. Minimum height 12'-6".

Economy Hi-Reach Telescoper. Estrada de Ferro Central do Brazil. Platform lift 61'. Minimum height to clear 14'.



Estrada de Ferro Central do Brazil.

No Design Restrictions.... in spot lighting

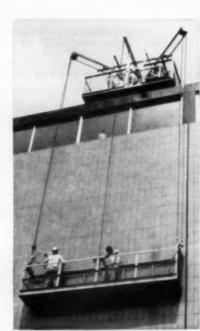
interiors when The Economy Hi-Reach Telescoper is on the job for overhead servicing.

For over 30 years Economy has been designing, engineering and building Hi-Reach Telescopers for all kinds of overhead maintenance. Write for illustrated installations bulletin. Our engineers have a solution to your hireach servicing problems. Special machines our specialty.



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For servicing building exterior — The Economy Wind-O-Washer. Electrically operated from the working platform by push button controls for up and down movements, and from the platform of the roof-car for lateral travel. The machine travels on a track, and when not in use, is backed out of sight by means of a turntable or transfer car. All jobs specially engineered.



It will pay you to get the facts on

IRON FIREMAN Selectemp ZONE HEATING

before choosing a heating or cooling system for new construction or modernization

A THERMOSTAT IN EVERY ROOM . . .

Iron Fireman SelecTemp, a new heating method with low pressure steam, provides the comfort levels desired by occupants.

SelecTemp, in conjunction with individual unit cooling, marks greatest advance in temperature control for year 'round comfort.

SelecTemp heating makes it possible to regulate the temperature of any room with remarkable precision. Each of the small, compact room heating units (which require no floor space) is controlled by its own built-in thermostat.

SelecTemp is a simple system. There are no electronic controls, no motorized valves or dampers, no complicated control system of any kind; yet the temperature of each individual room is very closely controlled by the room thermostat.

SelecTemp is a modulating system. Both the temperature and volume of the circulating air are automatically regulated to meet the needs of each room.

ALL KINDS OF BUILDINGS USE SELECTEMP, SelecTemp is being used successfully in almost every type of building, ranging in size from five rooms to hundreds of rooms. Architects and property managers quickly visualize the great number of applications when they review SelecTemp's unique characteristics.

For example, note the Blanchard Valley Hospital shown below. Each special room-nursery, surgery, delivery room-has individually controlled heat. Each room can be heated to fit the patient's needs. There is an additional advantage for hospitalsthermostats and circulating fans are non-electric. With no electric wiring, the SelecTemp heating units are completely safe in operating and other rooms where inflammable gases are present.

PERFECTLY BALANCED HEAT. SelecTemp heating adjusts itself quickly to changes in heat gain or loss, such as result from solar heat or cold winds against exposed rooms or wings.

OFTEN COSTS LESS THAN SINGLE ZONE SYSTEMS. SelecTemp is engineered for very economical installation cost in either new or old construction. It is a low pressure steam system. Boiler and steam distribution lines are essentially of conventional design. The main departure from usual steamfitting practice is in the use of small copper tubing between the steam mains and the SelecTemp units. These copper tubes can be snaked between joists and run behind baseboards, or within walls, as easily as electric wiring.

The College of Southern Utah (see picture below) found that thermostatic control in each room, with any system other than SelecTemp, would add at least \$14,000 to the cost of the heating plant for their new dormitory. Because of the favorable experience with dormitory heating the college is now using SelecTemp for such large heating areas as the Gymnasium and the Commons.

In most cases, SelecTemp has proved competitive in price with conventional steam systems having no zoned temperature control

LOW OPERATING COSTS. As in the case of the Everett building pictured here, many SelecTemp users have reported substantial savings in fuel costs. Reduction in fuel bills is one of several important features which are bringing about a swift spread in SelecTemp heating. For example, in motels, hotels and other buildings, heat can be turned down to as low as 40 degrees when rooms are unoccupied, with substantial fuel savings. Rooms reheat much more quickly than with other types of heating systems. Other features are: (1) Water heating coils can be installed in the boiler to provide ample hot water, winter and summer, at low cost. (2) Guests never complain about underheating or overheating, nor do they waste heat by opening



Modernization of Akron's oldest office building (Everett Building) included SelecTemp heat-Through an entire heating season as avings were 49.5%. This building to

ARE SOME OTHER TYPICAL SELECTEMP INSTALLATIONS

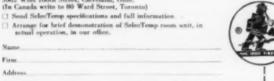


has always been a problem," says Architect Leo Strelka of Forest, Illinois. "You have solved it with SelecTemp's individual



College of Southern Utah chose SelecTemp heating for this new dormitory because of its thermostatic heat control in each room. Such control with any other system meant an extra expenditure of over \$14,000.

IRON FIREMAN MANUFACTURING CO.	
3062 West 106th Street, Cleveland, Ohio.	
(In Canada write to 80 Ward Street, Toronto)	





The temperature of individual rooms in this luxurious apartment building can be regulated by the occupants. With Iron Fireman SelecTemp neither overheating nor underheating disturbs the comfort of any tenant. In-the-wall cooling units provide the same room-by-room control of summer cooling.

windows. They regulate the heat themselves. (3) There is no problem of heat distribution in an extended structure like a motel. (4) Steam is safe.

ADVANTAGES OF SEPARATE HEATING AND COOLING. In the Panoramic Apartments and Town & Country Motor Hotel shown on this page (both luxury type establishments) Iron Fireman SelecTemp heating has been combined with individual throughthe-wall room cooling units—a perfect combination. Some advantages are: (1) Thermostatic temperature control in both heating and cooling, with every room a zone. (2) Low operating

costs—no heating or cooling of unoccupied areas. Rooms can be quickly reheated or cooled. (3) No inefficient compromise in attempting to combine the conflicting characteristics of heating and cooling by using a single room outlet. (4) No cooling condensate drain lines to install and service. (5) No cooling towers nor cooling water costs. (6) Greater dependability and continuity of service.

SEND FOR MORE FACTS. Mail coupon for catalog, technical data and specifications.

OCCUPANTS SELECT THEIR FAVORITE ROOM TEMPERATURES HERE

Room heating units, 18 inches high, are recessed 4 inches in walls, with only grille projecting. Unit shown has 12,000 Btu capacity. Other sizes (varying in width) have 6,000 and 18,000 Btu output.



Virginia Avenue Baptist Church, Atlanta, cuts heating costs in new educational unit, With the Iron Fireman SelecTemp system the offices can be heated throughout the week, and individual rooms heated when needed for mid-week meetings, without heating the entire building.

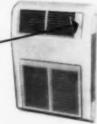


SelecTemp will heat the new wing of the Blanchard Valley Hospital, Findlay, Ohio, designed by Wilbur Watson Associates, Cleveland, In addition to room-by-room temperature control, SelecTemp's non-electric fans and thermostats insure safety in operating and other rooms.



Hundreds of motels throughout the United States and Canada are enthusiastic users of SelecTemp heating. The luxurious Town & Gountry Motor Hotel near Akron, Ohio, uses SelecTemp heating is combination with in-the-wall cooling. Each guest is in complete constral of bia own comfort. Firestone & Gassidy, Akron, Ohio, Architects.

Selectemp HEATING



I. Naftali, Nesgark, N. J. Kagineer B. Shaw, Neseark, N. J. Builders: A. B. Mattucci & Son, De Jacqued, N. J.

HOW SELECTEMP WORKS

Thermostet built into

Each room heating unit circulates fiftered warm ais which is heated by stoom supplied through small capper tubing. The same steam that heats the air also delives the circulating fan. Both fans and thermusters are non-electric — no wirting requiried.

> Thermestat and heating unit in each individual room

Copper tubing concealed in walls or floors

Ample heat reserve always available

supply and condensate return connect with bailer or district steam supplies low pressure steam which is always available right at the saem units, the moment it is needed. Fuel can be gas, oil, bottled gas at coal. Builer may be installed in any desired location.

For every size and type of building —hotels, motels, apartment bouses, schools, churches, office buildings, institutions, hospitals and homes.

This circuit breaker can pay for itself in 15 seconds





Snap! And the power is on again. It's that simple with a Westinghouse AB De-ion® circuit breaker. Unlike other protective devices, it quickly restores power with just a simple flick of the finger—no valuable time wasted looking for fuses, no fuse replacement costs, no need even to call a maintenance man. The trip position of the breaker handle quickly identifies the affected circuit.

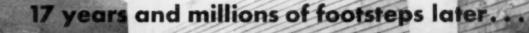
Today's buildings—with a wide range of electrical equipment from fans to floodlights—require positive insurance against overloads and short circuits. And when overloaded circuits go dead and business stops

cold, that's when Westinghouse circuit breaker protection pays for itself many times over by restoring electrical service quickly, effortlessly—with practically no loss of valuable time.

When you consider circuit protection for today's buildings, it will pay you (and your clients) to specify Westinghouse AB circuit breakers. Your Westinghouse representative can offer you a complete range of circuit breakers for every application. Call him, or write to: Westinghouse Electric Corporation, P.O. Box 868, Pittsburgh 30, Pennsylvania.

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WHERE BIG THINGS ARE HAPPENING FOR YOU



WRIGHT RUBBER TILE and the JOHNSON'S WAX BUILDING

Frank Lloyd Wright says of the building, "It is designed to be as inspiring a place to work in as any cathedral ever was to worship in." Unique inversely tapered columns lend striking charm to the interior and at the same time pro-



Time has proved the soundness of this inspired thought. It has been the meeting ground of countless architects, builders, artists and writers who have come to Racine to study this brilliant forerunner of modern industrial design.

And time, too, has proved the soundness of the materials selected for this uniquely functional building.

WRIGHT—famous over 100 years for outstanding quality floor products—was specified for use throughout the building. Today, seventeen years later, with only regular wax maintenance, WRIGHT Rubber Tile is lustrous and new-looking.

The facts speak for themselves. We suggest you consider WRIGHT Rubber and Vinyl tile for your next project. It's one sure way of providing your clients the very best in fine-quality tile flooring.

WRIGHT

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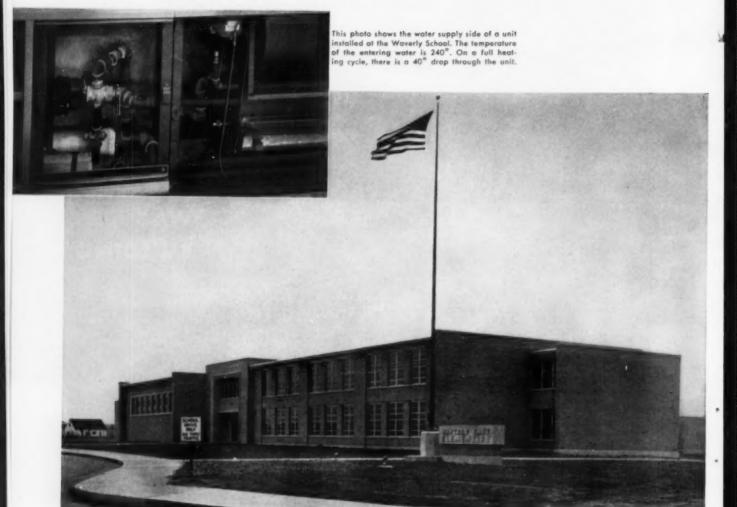
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At Waverly East Elementary School

High Temperature Hot



Waverly East Elementary School, Waverly, Ohio. Superintendent of Schools: Jahn Teichert; Architects: Howard and Thomas McClorey, Cincinnati, Ohio

BETTER AIR IS OUR BUSINESS



Illinois Heating Specialties



Mormon Nelson Console Heaters



HerNel-Cool Year 'round Unit

Water Saves Money

Herman Nelson Unit Ventilators Permit Use of Smaller Valves, Pumps and Piping

The Waverly East Elementary School in Waverly, Ohio, is typical of the many schools which have gained real benefits because Herman Nelson unit ventilators were specified. In addition to providing ideal "classroom climates", the Herman Nelson high temperature hot water system reduced construction costs appreciably. At Waverly, 240° water is circulated; and each unit ventilator can squeeze a full 40° of heat from it. Far less water is required than in a conventional system — smaller pipes, valves and pumps handle the heating job perfectly.

And Herman Nelson economy carries on long after construction is finished! Patented DRAFT|STOP

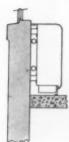
unit ventilators heat only when heat is necessary... save fuel when it is not. DRAFT|STOP controls downdrafts without adding to the heat load. Its unique design provides a constant supply of properly beated or cool fresh air... automatically compensating for temperature changes in the classroom. Pupils are alert and comfortable, Teachers can concentrate on teaching—in a healthful atmosphere that is conducive to learning.

Every school can enjoy more classroom comfort per dollar — the DRAFT|STOP way! Would you like more facts? Write to Herman Nelson Products, American Air Filter Company, Inc., Louisville 8, Ky.

CHOOSING THE RIGHT HOT WATER SYSTEM

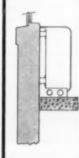
There is no "one best" hot water system. Each school must be considered on its own requirements—de-

sign, structure, and climate. Here are three Herman Nelson systems. Each has its own advantages.



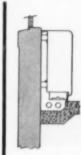
WALL-HUNG PERIMETER PIPING

All piping is contained within the mechanical equipment, and all piping through
the unit is furnished, including expansion loops as well
as bolancing valves and air
vents. Piping and hangers
with both cabinets and
DRAFT STOP wall are available.



CABINET-BASE PERIMETER PIPING

Supply and return piping is laid on the floor beneath units and cabinets. Easy to install, easy to maintain (any Herman Nelson cabinet can be individually removed). Piping requires no additional building volume and it may be insulated to reduce uncontrolled heat gain.



RECESSED-EDGE PERIMETER PIPING

This easily-installed depressed slab system offers definite control of slab edge loss, makes lower-cost insulation possible (insulating material is merely poured over piping). This system is recommended where classrooms have exterior doors that would otherwise have to be looped.

herman pelson unit ventilator products

American Air Filter Company, Inc.

System of Classroom Cooling, Heating and Ventilating



Herman Nelson Heating, Ventilating Units



Herman Nelson Unit Blowers



Herman Nelson Harizantal Unit Heaters



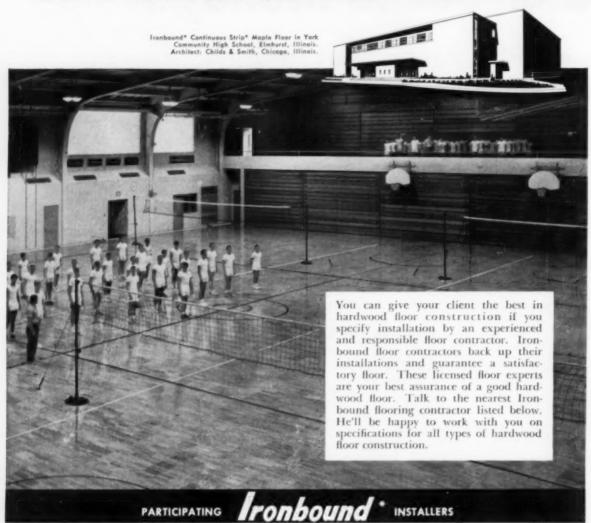
AMERICAN AIR FILTER COMPANY, INC.

AAF Dust Contro For School Shoo



Hermon Nelson Vertical Unit Heaters

even **ronbound** floors are no better than the men who install them



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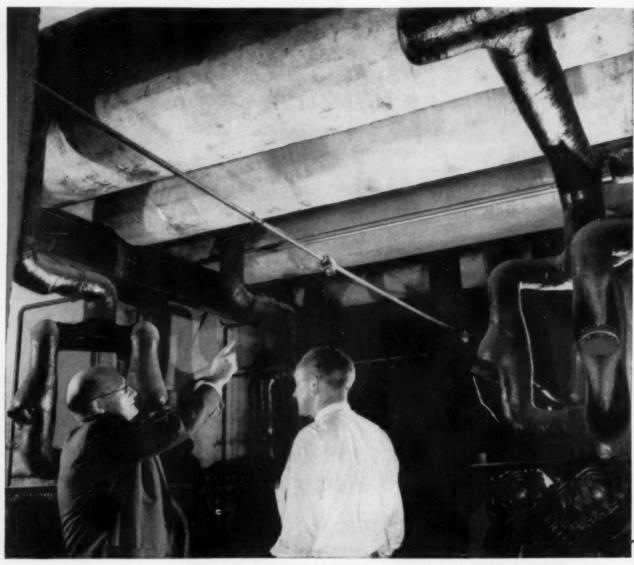
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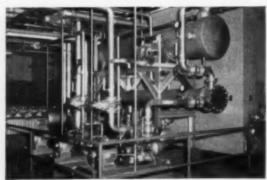




"They've never given us a bit of trouble," states Mr. R. E. Noll (left), Store Superintendent. With him is Mr. J. L. Quisenberry, Head of Maintenance for Wolf & Dessauer, who has been with the store since the eight Dry-Ex units were installed in 1937. The system, including eight 50 hp condensing units and 15 remote air handling units, air conditions the main building's seven floors. The system was installed by Hipskind Heating and Plumbing Company of Ft. Wayne.



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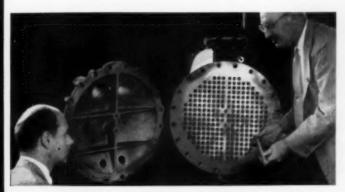
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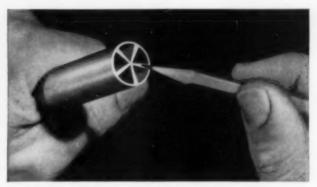
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Vacuum cleaning with conventional attachments helps to keep Armstrong acoustical materials clean and new looking. A cloth slightly moistened with soapy water, or wallpaper cleaner, can also be used to remove most smudges.



Spray painting, using thin coats of oil-base paint, will not reduce the efficiency of Armstrong materials. Care must be taken to coat all bevels, perforations, and fissures. Materials can also be brush-painted, using a regular 4" brush.

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Today's acoustical materials generally require no more frequent or costly maintenance than ordinary painted ceilings. All Armstrong acoustical materials, for example, have smooth, pre-painted surfaces that can be cleaned or repainted as often as necessary without losing their noise-absorbing properties. Once installed, they become a permanent part of the building, need only occasional care.

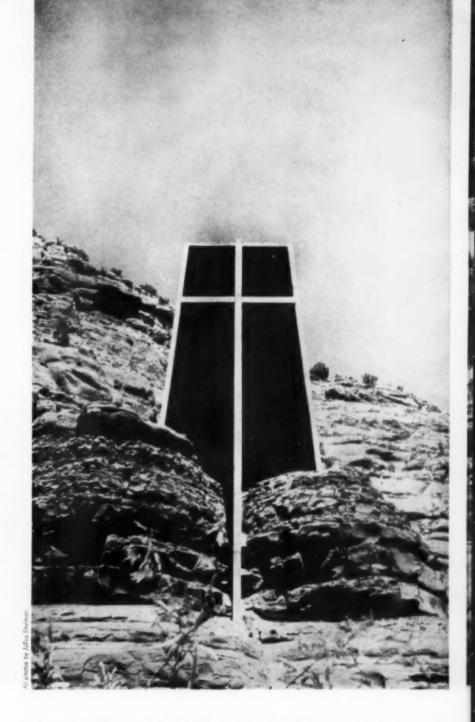
When upkeep does become necessary, however, proper methods must be followed. Loose dirt should first be removed from the ceiling by vacuuming, with the nozzle drawn across the material in only one direction to prevent rubbing dust into the surface.

Smudges or clinging dirt can be removed by a slightly moist cloth, dampened in water and soapsuds. To keep moisture out of the backup pads in metal-pan materials such as Armstrong Arrestone, water and soapsuds should be applied with a sponge. Wallpaper cleaner or artgum is also ideal for wiping smudges from materials like Armstrong Cushiontone and Travertone.

All Armstrong sound-conditioning materials can be repainted by either brush or spray gun. Care must be taken, however, not to bridge or close up the noise-trapping perforations or fissures. Thin coats of a good grade flat oil paint are recommended.

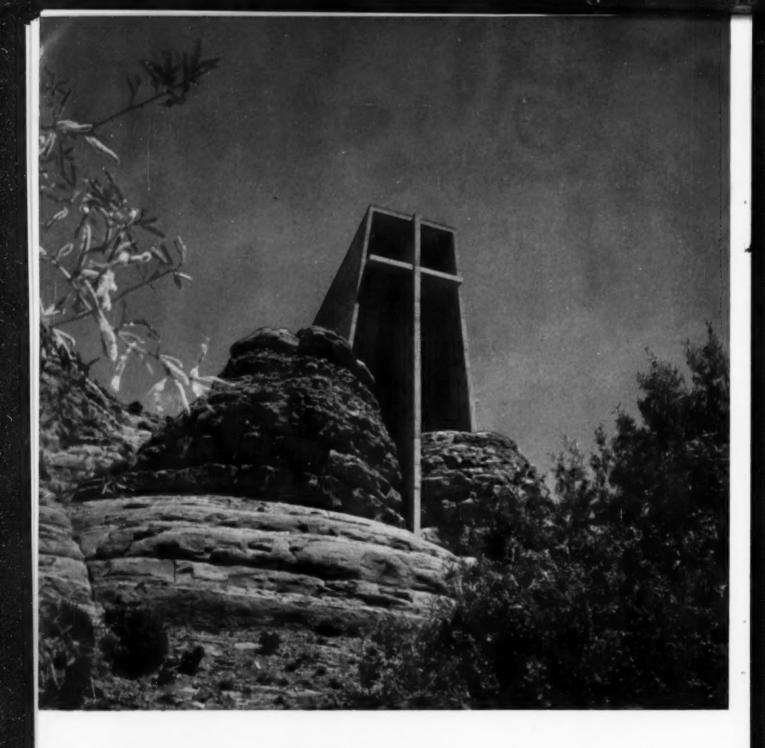
For full maintenance data and other information on all acoustical materials in the Armstrong line, call in your Armstrong Acoustical Contractor. He can give you expert help in selecting the right acoustical material for any sound-conditioning job.

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CHAPEL OF THE HOLY CROSS

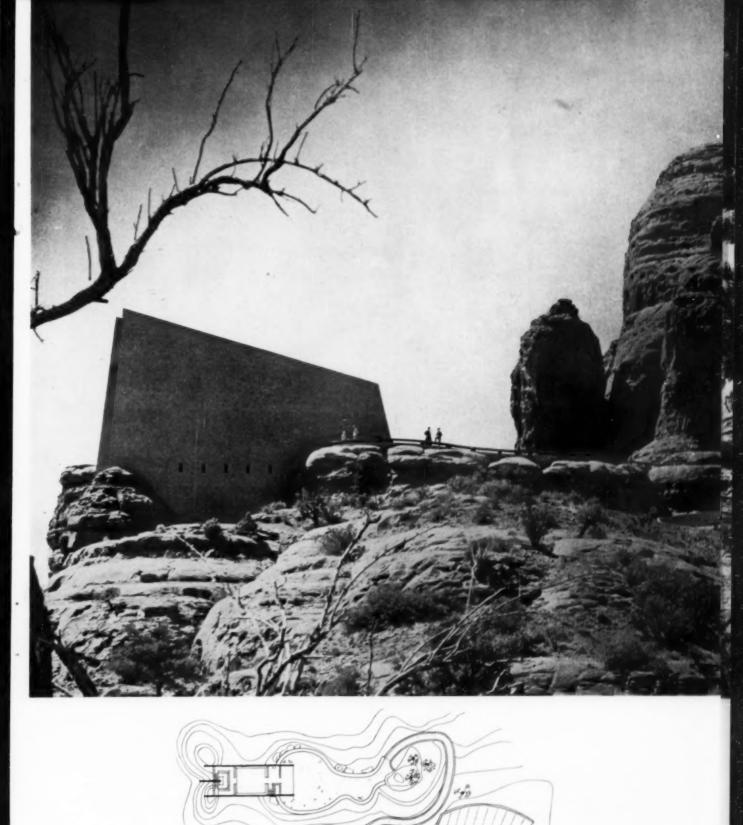
Anshen & Allen, Architects; Robert D. Dewell, Civil and Structural Engineer; Earl & Gropp, Electrical and Mechanical Engineers; William Simpson Construction Co., General Contractors; Fred Coukos, Construction Superintendent; Bernard T. Espelage, O.F.M., D.D., Bishop of Gallup; John Driscoll, Pastor; Keith Monroe, Sculptor

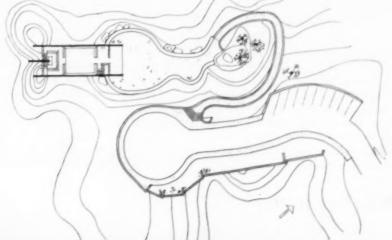


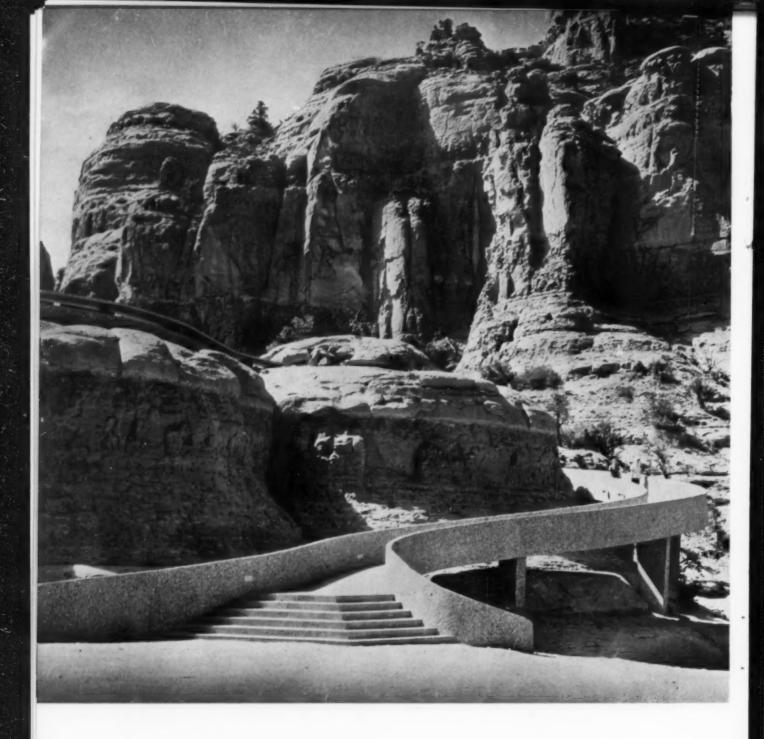
The Chapel of the Holy Cross at Sedona, Arizona is an arresting building. It is also fine architecture. It combines more than the usually requisite assortment of identifiable satisfactions in such a way that the total effect renders analysis of its particulars, though pleasurable, an academic process only partially instructive because it is incapable of completion.

Of course all fine architecture resists analysis. Here, for example, it is possible to identify the particular ingredient of an unparalleled site; to recognize in the shape and scale of the building and its parts, in the choice of surface, color and texture the sensitive respect which the architects have expressed for the character of that site and at the same time for the particular functions and materials and processes involved.

These are causes and effects capable of sensible amplification. But beyond the ability of words to describe its achievement, this building can speak to the mind and spirit regarding place and time and purpose. Certainly it suits its site. It has the ability to suggest today, both yesterday and tomorrow, and it is an architecture appropriate for worship with power to impress its expressive image on the memory.





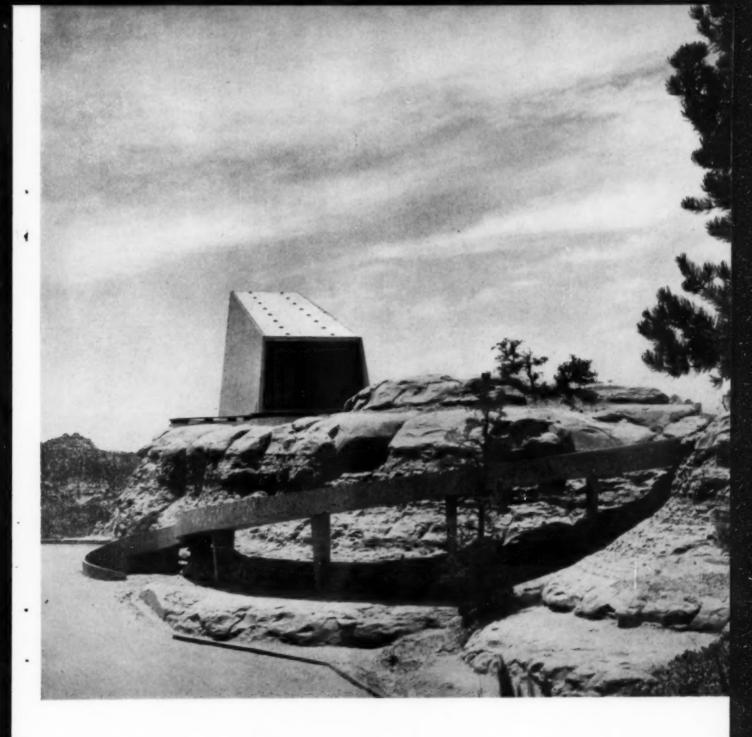


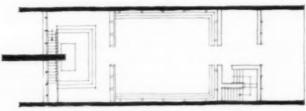
Three Miles from Sedona, Arizona and one hundred fifty feet above the floor of the Verde River Valley, the chapel rises from a spur of deep red sandstone at the base of a fifteen hundred foot vertical cliff graduated in color from the red of the spur to a light cream top.

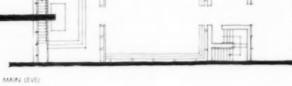
From the car turn around below and east of the chapel, steps lead to the textured concrete ramp, which curves up and around the cliff of the spur to the chapel entrance plaza.

The chapel itself, the gift of Marguerite Staude to the Roman Catholic Church in memory of her parents, is designed to seat approximately fifty people in the permanent pews along the side walls and across the rear. In the months when tourists may swell the size of the congregation, folding chairs will increase the capacity to one hundred fifty. In the basement are the confessional, office, two sacristies and services.

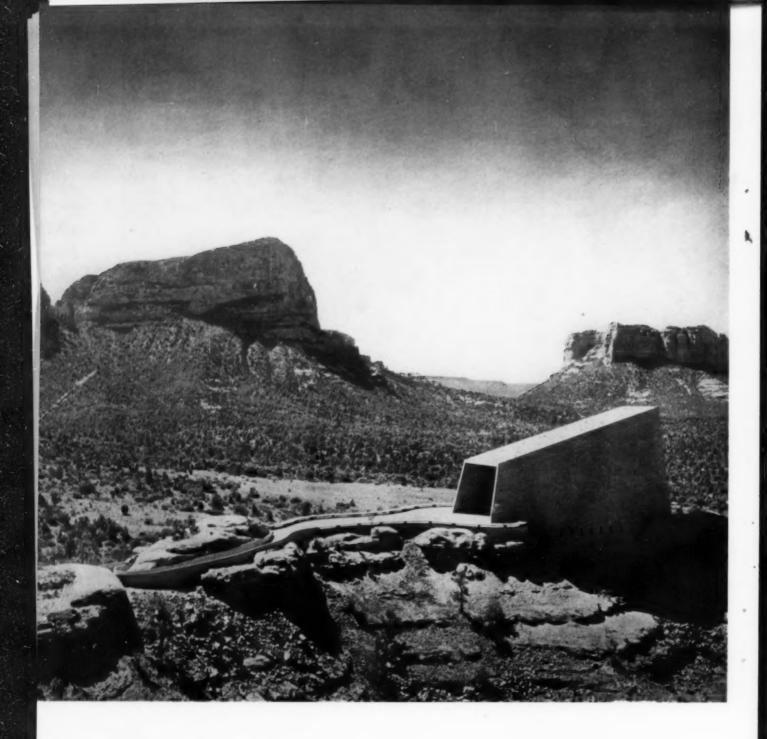
The building is a reinforced concrete shell, twelve





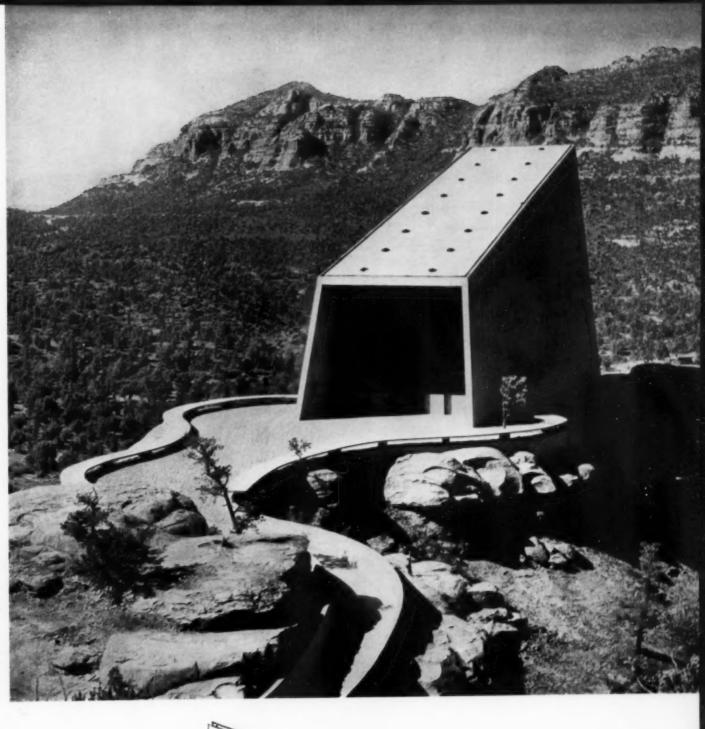


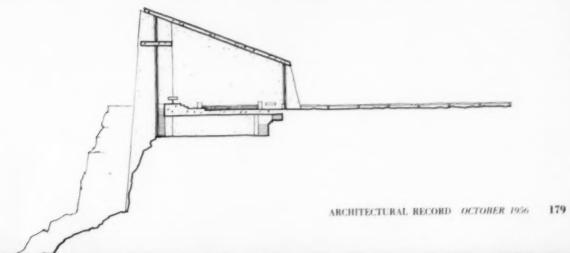




inches thick, integrally colored and sandblasted to expose a rich textured aggregate on both the interior and exterior surfaces. The walls were poured in sections, eight feet high. The two ends of the chapel are glazed with a smoke colored glass which eliminates glare while permitting a clear view of the magnificent panorama beyond the altar. The orientation to the southwest and the projecting side walls and cross act as a large louver in preventing direct sunlight from falling on the glass. The floor surfaces are trowel-finished concrete. The tall, slim entrance doors are aluminum with specially detailed horn-shaped handles.

Construction was carried out under most difficult conditions and the architects are particularly grateful to the general contractor and his job superintendent for the high quality of the work. Interestingly the contractor as a young man had built the church which is the headquarters for the chapel pastor.



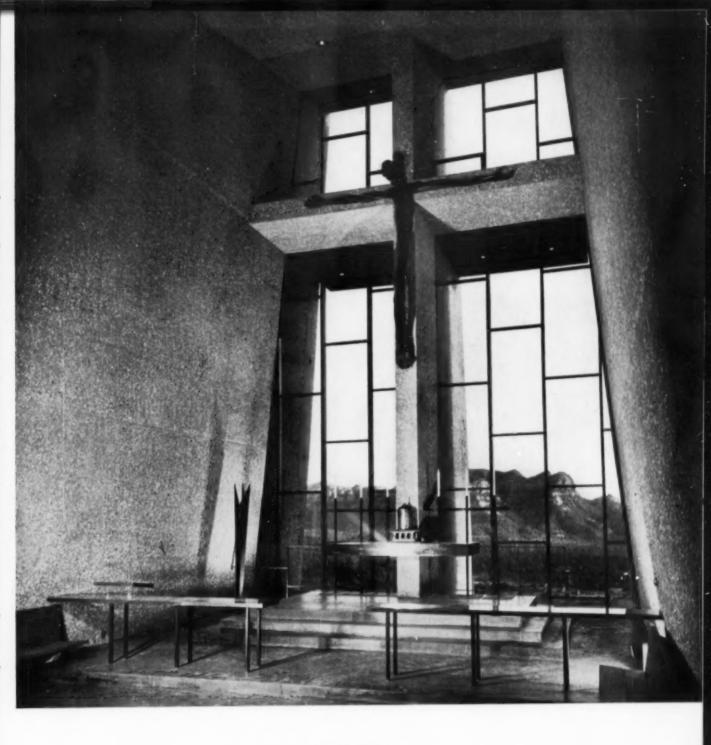




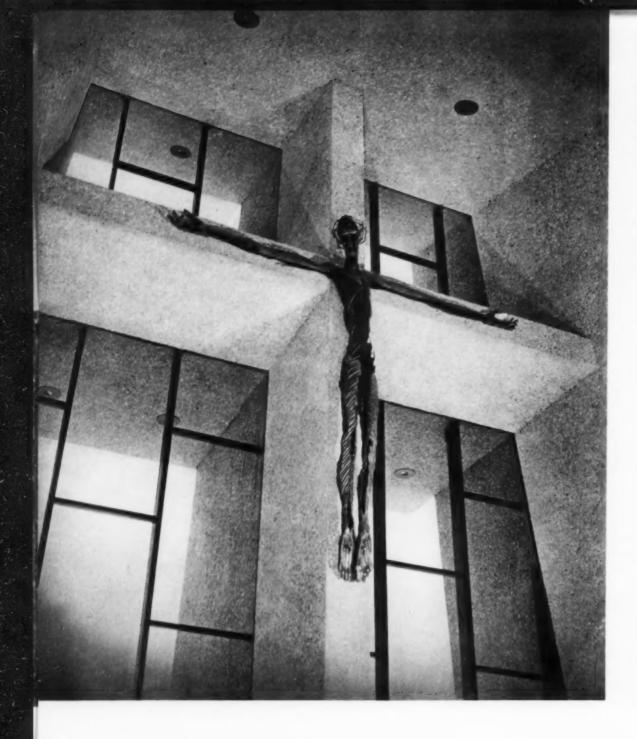
The great cross in the southwestern end wall is ninety feet high and carries on its interior face both the black marble altar and the Corpus. This fine piece is the work of Keith Monroe, San Francisco sculptor. It is wrought in iron and like the building as a whole strongly reflects the rugged environment. It is thirteen feet high and its rough highlighted shell surface is in strong contrast with its dark hollowed interior spaces.

Taken all together, this building is a transcendant

integration which seems to draw its strength from its location, from the simple freshness and suggestion of endurance in its profile, the rigorously restricted palette of materials, the recall of environmental elements without actual use of site materials, the skillful contrast of the curvilinear ramp and plaza with the crystalline contours of the building, and most importantly the precise organization of parts to achieve an impression of size which is in harmonious scale with the grand setting.







It may fall to the lot of other architects to work with sites of similar grandeur, if plans for the Mission 66 program of the National Park Service do lead, as planned, to a substantial building program in the national parks. NIS and its concessioners in the parks will be dangling before architects just such problems in scale, in awesome scenery, color, lighting conditions.

In an earlier day rusticity was the accepted answer, or chalet importations from another mountainous land. Contemporary architecture has not had much opportunity to test its tenets in such terrain, or, too much success when it has had the chance.

The design of this chapel seems to suggest a better approach than we are used to in our national parks. The chapel does not seem bothered by the problem of scale. It does not seem to feel called upon to feign modesty, or to bow to the hills in feeble imitation. Nor does it try for self-assertiveness in the manner of a bantam rooster. It seems rather to appreciate its magnificent setting, and react like a well-mannered guest.

THE SIX DETERMINANTS OF ARCHITECTURAL FORM

By PAUL RUDOLPH

Illustrations from the author's collection, with his captions

The early theory of modern architecture focused on a very limited area. Many architectural problems were largely ignored, brushed aside as if they didn't even exist; disciplines gave way to worship of one god and then another. This limited approach, coupled with search for excitement, produced some very ungainly buildings, for surely mankind has never built such dry, timid, monotonous, modish structures as we do today. The general disorder has even been said by some to be "human," and anything else is termed pretentious, regimented, intellectual, dictatorial.

One of the most serious charges against modern architecture is its failure to produce understandable theories about the relationship of one building to another. The Ecole des Beaux Arts was actually very rich in this aspect while modern architects tend, even today, merely to admire some "human" square, preferably one located as remotely as possible, and proclaim that "we must make our squares more human." This plea is of course admirable, but it still leaves us with acres of cars and buildings casting shadows a quarter-of-a-mile long. The quickly moving vehicle and unprecedented requirements of sheer bulk have given us new dimensions of scale. Human scale must be coupled to the scale given by a quickly moving vehicle. The Ecole des Beaux Art created inhuman squares, boulevards, plazas, etc. when there were no automobiles. It is a paradox that our revolt against them has been so strong that we ignore the scale of vehicular traffic. One sees six-story high cottages on one hand and cottages utilizing skyscraper disciplines on the other. A flea is not designed like an elephant.

If we are concerned with new problems of scale and human response, we should also heed some older ones. Monumentality, symbolism, decoration, and so on — age-old human needs — are among the architectural challenges that modern theory has brushed aside. Possibly the extremes are illustrated by the so-called Bay Region style and Mies van der Rohe. The Bay Region style has validity in terms of cottages, but it has made little progress in showing us how to humanize buildings which involve large bulk.

Nikolaus Pevsner writing in the Architectural Review of April, 1954, explains that: "The qualities of the modern movement were not developed to please the eye, but because without them no workable, no functioning, no functional architecture is possible in our age." But surely he was reporting the attitudes of the thirties, not those of today. We no longer think that when the problems of function have been solved the exterior form will be found crystallized. As Matthew Nowicki warned us in his famous article "Function and Form," we cannot keep on pretending that we solve our problems without precedent in form.

Many of our difficulties stem from the concept of functionalism as the prime or only determinant of form. There are certainly as many as six determinants of architectural form, and though their relative importance varies with the individual problem, each is important, each must be heeded.

The first determinant is the environment of the building, its relationship to other buildings and the site. As stated above, modern architecture has been particularly weak in this respect and indeed even negative,



Identical units made palatable by manipulation of space between them

Relationship of a Building to its Neighbors



Church is given emphasis by coherent space around it, but in America our buildings are not well related



The Ecole des Beaux Arts was actually very rich in the handling of relationships between buildings

ignoring especially the relationship of the building to the sky. We usually say that our buildings are related to others by contrast, but this excuse is adequate only occasionally. Of course, the danger in respecting too literally the earlier architecture, which is usually eclectic in character in this country, is that we may create a new eclecticism, i.e., one approach to creating harmony with Gothic, another to early New England, another to Georgian, etc.

A truly successful building must be related to its neighbors in terms of scale, proportions, and the space created between the buildings. Most important of all, it must define and render eloquent its role in the whole city scheme. Buildings such as governmental structures, religious buildings, palaces devoted to entertainment, gateways to the city, should serve as focal points in our cities and could undoubtedly indulge in certain excesses, while buildings for commerce, housing, finance, administration should not dominate our environment.

Just as the 19th century architects showed so little regard for construction, we 20th century architects tend to disregard our role in the city scape.

The second determinant of form is the functional aspects. I will not discuss this except to say that most of our buildings look like assemblages of workable parts from Sweet's Catalog, with little regard for the whole, the idea expressed, or the human response. This is not to say one is not passionately concerned with how the building works.

The third determinant of form is the particular region, climate, landscape and natural lighting conditions with which one is confronted. The great architectural movements of the past have been precisely formulated in a given area, then adapted and spread to other regions, suiting themselves more or less to the particular way of life of the new area.

We now face a period of such development. If adaptation, enlargement and enrichment of basic principles of 20th century architecture were carried out, related always to the main stream of architecture and the particular region, the world would again be able to create magnificent cities. Unfortunately, little progress has yet been seen. We continue to ignore the particular. Henry Russell Hitchcock has pointed out that "the utilitarian language of modern architecture as used throughout the world tends to have something of the thinness and lack of color of basic English. We do not want a uniformity of architecture which might tend to confuse a muddled traveler into attempting to enter a house identical to his own, not just in the wrong street, not even in the wrong city, but actually in the wrong country or the wrong hemisphere."

There are several conditions which tend to limit regional expression. First there is industrialization; second, ease of travel and communication; third, the rising cost of traditional materials and skilled labor; fourth, the influence of the architectural press; fifth, the worship of that which is popular and our desire to conform; sixth, the "do it yourself" "according to the manufacturer's instruction" movement; and seventh, the abstract qualities inherent in the new concept of space.

The fourth determinant of form is the particular materials which one uses. Each material has its own potential, and one seeks the most eloquent expression possible. We are currently going through a structural exhibitionism stage, but this will pass. The vitality of structural forms has beguiled architects into thinking that the dramatic use of structure could make great architecture. In fact there has been a very real misuse of structure and the formal qualities of architecture are still being ignored. Buckminster Fuller domes, the latest space frames, the newest plastics, etc., are only new kinds of bricks which broaden our means of expression.



One enjoys sensing the complete dimensions of a building from one point of view



The podium method



Another building as a base



The role of the various buildings is clear, primarily because of the relationship to the sky







The corners are important

Relationship of Building to Sky

Relationship of Building to Ground



Water can be effective



Platform supported by columns



The familiar pilotis



Walls adapted to the terrain

Only buildings which need great visual emphasis should utilize such devices, and structure should always remain merely a means to an end. Many younger architects fail to appreciate this basic principle. However, regular structural systems are usually a better method of organizing our designs than the axial arrangement of much traditional architecture.

The fifth determinant of form is the peculiar psychological demands of the building or place. Such necessities are met primarily through the manipulation of space and the use of symbols. We are particularly unsure in this aspect, partly because the revolution threw out much which still has validity. We must learn anew the meaning of monumentality. We must learn how to create a place of worship and inspiration; how to make quiet, enclosed, isolated spaces; spaces full of hustling, bustling activities pungent with vitality; dignified, vast, sumptuous, even awe-inspiring spaces; mysterious spaces; transition spaces which define, separate, and yet join juxtaposed spaces of contrasting character. We need sequences of space which arouse one's curiosity, give a sense of anticipation, beckon and impel us to rush forward to find that releasing space which dominates, which promises a climax and therefore gives direction.

The sixth and last determinant of form is concerned with the spirit of the times. This one is perhaps the most difficult of all; here is the call to genius. Sir Geoffrey Scott in The Architecture of Humanism says: "The men of the Renaissance evolved a certain architectural style because they liked certain forms of a certain kind. These forms, as such, they preferred, irrespective of their relation to the mechanical means by which they were produced, irrespective of the materials out of which they were constructed, irrespective sometimes even of the actual purposes they were to serve. They had an immediate preference for certain combinations of mass and void, of light and shade, and, compared with this, all other motives in the formation of their distinctive style were insignificant." We need not be ashamed of our own passion for certain forms today, although the layman does not always share our enthusiasm. Interestingly enough, the layman usually reacts favorably to that which is truly great.

These six determinants of architectural form might lead toward richer architectural expression. At the same time one cries for greater expressiveness one must also heed Rudolph Whitkower. He said, "When architects depend on their sensibility and imagination architecture has always gone downhill." There are few geniuses and most of us need guidance and discipline. Our architectural schools are more interested in appearing avant garde than making principles clear.

Isn't it true, however, that as younger architects acquire maturity they begin to feel the need for some of the disciplines they might have been given in school?

A few months ago there appeared in the Architectural Review a brilliant article by J. M. Richards entitled "In Defense of the Cliché." He said, "In the fine arts it may be necessary for each man to create his own revolution and thereby justify himself as having something personal to say, But in architecture what the architect has personally to say must, in most cases, be subservient to what the building has to do and the part it has to play in the larger prospect — for example, in the design of a town, which is the sum of many architects' buildings. In normal times that goes without saying. But at this moment architecture so sorely needs its plagiarists that the value of not being a genius needs stating afresh.

"Architecture cannot progress by the fits and starts that a succession of revolutionary ideas involves. Modern architecture brought release from the restrictions of an archaic ready-made style. But the freedom it also brought — freedom to plan in all three dimensions and to create new



The monument



The awe-inspiring place



One is drawn forward



The place of worship



The sense of protection



The interest of activity



The sense of quiet repose

Psychological Demands



Anticipation







Wright was born knowing how to manipulate natural light (sometimes without full regard for the use to be made of it). Some other architects have been a long time learning

esthetic values from the exploitation of new techniques — though a source of inspiration to the imaginative design, left most architects up in the air. Design of this kind looked easy to do; but just because of the absence of rules it was particularly difficult to do well. Suddenly, anything was possible; and quality in modern architecture suffered accordingly."

In one sense any classical building with its columns, capitols, porticoes and window architraves is a collection of clichés. The cantilever, the superstructure perched on pilotis, the glass enclosed staircase tower, the ribbon window, are legitimate expressions of our structural methods that in the last thirty years added so much to the architect's repertoire.

The clichés, in their proper role, are not merely a means of appearing up-to-date, but a means of insuring a civilized standard of design—even in the absence of genius—by providing the architect with a range of well-tried, culturally vital forms and motifs to convert the passive act of plagiarism into the creative act of building up and systematically enriching an architectural language appropriate to our times.

"Cliché" is perhaps not the right word for the enrichments we need. It has too much suggestion of contempt; there is a connotation of superficiality. To provide enrichment a form or motif needs something of real value in a common situation, some quality of lasting validity. Perhaps "standard" is a better term.

Last year I had occasion to analyze the 33 premiated designs from a broad awards program; I found them an interesting barometer to current preferences in forms, motifs, devices, or "esthetics."

If those designs are symptomatic of our present-day attitudes, then one concludes that a new tradition has indeed been established. There were striking similarities in spirit and intent in almost all the buildings selected. For example, 95 per cent utilized regularly spaced structural systems, thereby freeing the interior arrangement. The linear qualities inherent in such cage-like construction were usually emphasized, and were largely the means of organizing and disciplining the design.

It is worth noting that a recreation building, a residence and a war memorial were symmetrically organized; the remainder asymmetrically. One notes that the regular bay system seems more successful when the bay is wide enough to accommodate subsidiary divisions. No new light was shed on the problem of starting and stopping such bay-disciplined designs; they often resembled sliced loaves of bread with no beginning nor end.

Twenty-two per cent of the buildings were to be raised above the ground on pilotis, and another 25 per cent undertook to gain that effect by having the lower floor completely filled with glass enclosing walls. One-half were related to the ground by slab construction; only two were to rest on pedestals.

One of modern architecture's greatest failings has been its lack of interest in the relationship of the building to the sky. Ninety per cent utilized flat roofs; the remainder were to be pitched. Here is a slight cause for concern, for there are many design problems where the silhouette is of the utmost importance. One doubts that a poem was ever written to a flat-roofed building silhouetted against the setting sun. And what about its appearance on a misty, foggy day? The insistence on flat roofs also tends all too often to make modern architecture have the appearance of a dog-house, when juxtaposed against the high ceiling pitched roofs of much earlier architecture. With one exception water appeared to be mysteriously drained from all roofs. Traditional methods of water shedding created real drama, and one longs for the modern equivalents.

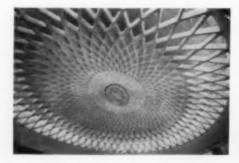
Rather surprisingly two-thirds of the architects turned the corners of their buildings by carrying the glass to the corners, with the return wall solid. This desire to reveal the essentially planear aspect of our construction reflected itself in almost all of the plans as well as in the elevations by



The cute and seductive building tends to dominate, even though it merely houses a machine



We should find ways of seeing our buildings above the automobiles



Elaborate form work is possible where labor costs are low. A hypothesis: labor-material ratios cause national differences, but true regionalism comes through form, not malerials





Plasticity should be reserved for "governmental structures, religious buildings, galeways to the city and palaces of entertainment." This galeway to the city (St. Louis airport) is properly plastic and its role in the city scape is thereby rendered eloquent. It is the only airport worthy of the name





The continual thinking in terms of individual buildings as unrelated gems is disastrous; buildings tend to brutalize rather than to refine





They did it better in Delhi than they did in San Francisco

Environmental Factors

Some Comments on Regionalism



Victorian architecture produced some fine regional examples such as this house at Veradero Beach. Cuba, with raised living quarters, precision in proportioning supporting members, and various light-catching details

Mies' aparlments symbolize perhaps better than any other multi-storied structure America's industrialized techniques, and in that sense they are peculiarly American





This house design originated in Cambridge, but it moved to Australia without change

reducing all wall divisions to a series of rectangles. These modular constructions are undoubtedly expressions of industrialized component parts, although paradoxedly most of them undoubtedly will actually be constructed by essentially handicraft methods.

Sixty-five per cent utilized uniform ceiling heights, 25 per cent allowed the ceilings to follow the slope of the pitched roof, while only 10 per cent varied the ceiling heights in any way. This self-imposed uniform ceiling height limitation is difficult to understand when one considers the importance of the psychological effect of varying ceiling heights. To a degree this spatial characteristic is compensated for by the courtyard completely within the building, a device to be utilized by 45 per cent. Twenty per cent of the designers created outer defined courtyards and patios by extending walls out into space.

However, the paucity and limitation of spatial concepts to be utilized are extremely disappointing. Laymen almost never demand that their structure be clearly expressed, but they often describe in eloquent terms architectural space and particular psychological implications desired. The laymen seem more knowing about those matters. This current architectural limitation is evidenced by the lack of interest in the handling of natural light. There are all too often interior spaces which are merely flooded with light without any consideration of psychological or physical effects.

We all recognize that strict functionalism does not satisfy the need for the "sense of symbolism, the lasting monument, the vital ideas and shared emotions that is part of architecture's historical function to perform." In the design awards one finds symbols used three times (it was always a cross) while two designs incorporated sculpture, and two painting. One understands the difficulties, but it is undoubtedly up to the architect to lead the way.

Perhaps the most important single aspect of those designs as a group is the apparent lack of interest in the environment in which the building is placed and the particular role it plays in the city as a whole. Only 15 per cent, as presented, indicated anything at all of the character of the surrounding structures. The continual thinking in terms of individual buildings as gems unrelated to earlier works is disastrous, creating cities whose buildings tend to brutalize, rather than refine.

The lack of interest in how our buildings actually appear is also indicated by the fact that only four of the thirty-three designs indicated any lettering or signs, and only about one-third indicated any comprehensive landscaping treatment.

Every building, no matter how large or small, is a part of a greater whole; and the architect perforce participates in planning. Park Avenue, like every corner cross-road in the land, is being rebuilt in a fragmented way. Indeed at least one intersection of Park Avenue will shortly have four unrelated buildings, one on each corner, with all-glass façades. It will be interesting to see glass buildings reflecting each other. Much of the esthetic enjoyment of a glass building is its mirroring of earlier and contrasting architecture.

In every cultural effort of each generation it is the very disciplines which we so anxiously want to cross out that help us find and determine our basic values. These of course change with each generation because society is dynamic. But for the clarity of its dynamic force it needs discipline. Otherwise it becomes chaotic.

Great architectural precepts — still valid — would surely suggest other determinants of form than the fashionable or the functional. Perhaps they would suggest also some disciplines, to keep us from being carried away by our new freedoms. Modern architects fought hard against the restraints of outworn styles; the day is won; but the visual disorder of our cities still abounds. Can we enlarge our vision sufficiently to meet this challenge? It is the architect's responsibility.

The Spirit of the Times





WAINWRIGHT BUILDING, St. Louis

CARBON PIRIE SCOTT STORE, Chicago

ROCKEFELLER CENTER SUILDINGS, New York Pointand & Malmalater; Carlett, Nerrison & MacMarray; Hood & Foulthous

LEVER HOUSE, Row York Stidmore, Owings & Marrist

TRIMITY CHURCH, Bestern

PHILADELPHIA SAVINGS PURID SOCIETY
BUILDING, Philadelphia
Norm & Lange

CENERAL MOTORS TECHNICAL CENTER, Betroit Section & Section

LARE SHORE DRIVE APARTMENTS, Chicago

S. G. JOHNSON & SOR, INC., ADMIR. BLDB., Radiol Frank Lloyd Wright

MONADNOCK BLOCK, Chicago Burnham & Root

DAILY NEWS BUILDING, New York Hood & Howelle

TVA NORRIS DAM & POWER HOUSE, Tonnessed Reland Wents, Architect-In-charge

BOSTON PUBLIC LIGRARY, Boson McKim, Mend & White

STOCK PAVILION, Rotalgh Hewick! & Definicir

CHRISTIAN SCIENCE SMURCH, Berbeley Bernard Maybeatt

WOOLWORTH BUILDING, New York Case Officert

CROW ISLAND SCHOOL, Rilingle Section & Section,

MANUFACTURERS TRUST BUILDING, New York

UNITY CHURCH, Ont Port Front Lloyd Wright

BEDRASKA STATE CAPITOL, Linguis Bortram G. Geodhuo

S. C. JOHNSON & SON, INC.; LABORATORY, Recini Frank Lloyd Wright

WHITED RATIONS SECRETARIAT, New Yor Walloon K. Harrison & Consultants

LINCOLN MEMORIAL, Washington Honry Boom

Core Secrition

Pietro Bolluschi

H. H. Richardson UNIVERSITY CLUB, New York

McRim, Mend & White CRANDROOK SCHOOLS, Michigan

WINERALS & METALS RESEARCH BLDG., I.I.T., Chicago

ALGOA BUILDING, Pittsburgh Harrison & Abramovita

MUSEUM OF MODERN ART, New York Goodwin & Stone

PENNSYLVANIA STATION, New York McKim, Mead & White

EXPERIMENTAL SCHOOL, Los Angeles Richard Neutro

AGOGE TRUCK PLANT, Butron

100 MEMORIAL DRIVE APARTMENTS, Combridge Kannedy, Kach, Dollare, Rapson & Brown

CENTRAL LUTHERAN CHURCH, Portland Platra Balluschi

HOUSES

F. G. MOBIE, Chicago Frank Lioyd Wright

E. J. KAUFMANN, Pennsylvania Frank Lloyd Wright

YALIESIN WEST, Arisons Front Lloyd Wright

HENRY VILLARD, New York McKim, Mead & White

WATTS SHERMAN, Newport

AVERY GORMLEY, Immoo Frank Lloyd Wright

W. W. WILLITTS, Illinois Frank Lloyd Wright

D. R. GAMBLE, Passiono Greene and Greene

Philip Johnson

Faut Rudelph ELLEN SCRIPPS, La John

WESTON HAVENS, Burbaloy Harwell Hamilton Harris

LOVELL "HEALTH HOUSE", Les Angeles

EDITH FARMSWORTH, Chicago

ONE HUNDRED YEARS OF SIGNIFICANT BUILDING

5: HOUSES BEFORE 1907

ALTOGETHER FOURTEEN HOUSES were named by ARCHITECTURAL RECORD'S panel as belonging in the group of fifty buildings deemed most significant in the last one hundred years of architecture in America.

For convenience in presentation, these houses have been divided into two groups. Those completed in the first half of the period (before 1907) are shown in this installment of the series which began in June, 1956 and which will conclude in May, 1957 on the occasion of the 100th anniversary of the American Institute of Architects.

It is not surprising, though perhaps regrettable, that only three of the fourteen are products of the first half of the one hundred years under consideration. In many ways, they seem much more remote in time than the half to three-quarters of a century which separate them from our efforts today. Even the ones most frequently mentioned will demand from many a considerable objectivity if their significance in a developing architecture is to be understood and appreciated.

The Villard houses by McKim, Mead & White represent, of course, the academic tradition which informed the aspirations and activities of the majority of our best talents for over 50 years. The Low house, by the same architects, along with Hunt's Ochre Court and Biltmore received only slightly fewer nominations.

The Watts Sherman house, by Richardson, is an outstanding example of the rich, free and romantic reach for something beyond the academic and was rivalled in the nominations by the Stoughton and Glessner houses from the same man.

The Willitts house, by Wright, is more easily identified with the continuing development of the house as we have seen it in the last fifty years—in great part, no doubt, because of Wright's domination of that development which will be clearly seen in a subsequent installment of the houses built since 1907.

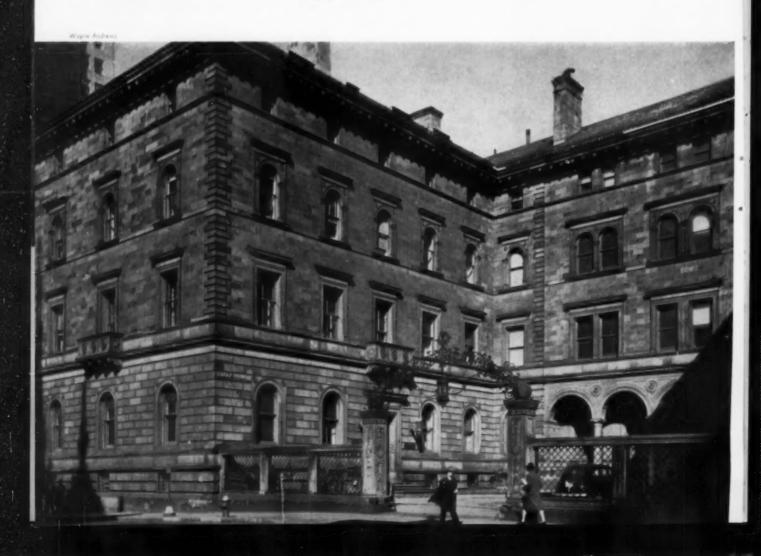
Henry Villard Houses, New York, 1885, McKim, Mead & White (Fourth)

"Our historical interest today in 19th century forerunners of the modern movement, such as Richardson's work or the brown-shingled houses of McKim, Mead & White, often blinds us to the sheer esthetic quality of the best academic work. Authoritative in this field were the Villard Houses, adapted from the imposing Cancelleria Palace in Rome. Ordered, reticent, monumental, these houses introduced a new discipline of form after several decades of confused and picturesque romanticism. They set the mark for two generations of academic work based on the Renaissance and Classical traditions."

"The first large-scale adaptation of the Italian Renaissance to our domestic architecture, it boldly combined several great houses into one "palazzo" surrounding a courtyard open to the street—a masterful innovation unfortunately unique.

The dignity of design, together with the employment of our best painters, sculptors and metal-workers in making the composition a sumptuous marriage of the arts, set a new standard of taste later exemplified by the Boston Public Library and the University Club by the same firm."

Edward Steese





Wayne Andrews

William Watts Sherman House, Newport, 1876, Henry Hobson Richardson (Fifth)

"The Watts Sherman house is the Henry James novel of architecture; it civilized a straightforward yet romantic and adventuresome Yankee tradition aided, but not dominated, by Europe. What is more important, it restored to our domestic architecture a sense of organized space, light, texture and color. Perhaps some greater houses were built by Richardson and his followers afterwards, but who knows what they would have been without this sire?"

James Ackerman

"Richardson's early essay in the eclectic style, miscalled 'Queen Anne,' it derives from all styles, yet copies none, and combines nearly all known materials and surfaces into a harmonious whole designed for spacious living.

Distinguished for boldness of plan and exterior design, with sweeping roof-slopes, massive chimneys and an inspired contrast of scale between sturdy structural members and meticulous details, it is an outstanding expression of individualism that set a comfortable mode for country estates and detached houses for many years."

Edward Steese

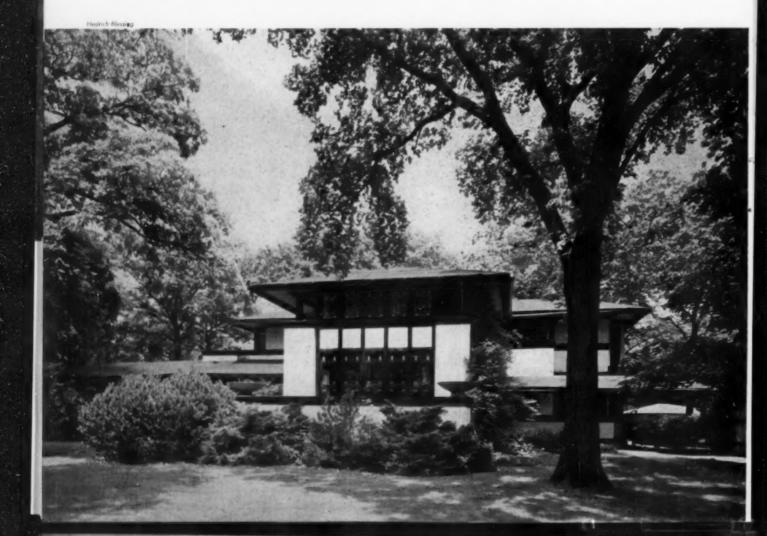
Ward W. Willitts House, Highland Park, Illinois, 1902, Frank Lloyd Wright (Seventh)

"This has been acclaimed the first of Wright's independent masterpieces. It stretches wide and rises high recalling broad terrains and slender trees; like the sky the unbroken roof planes reach over all. After half a century its energy is as palpable as its quiet, unpredictable entirety. It is a declaration of essentials not only sought but won.

Many features of the Willitts house were not new in its day—the central core of chimneys and circulation, the unbroken roof, the cross plan, dark timber framing with light stucco, the plinth, rain-catching urns. What makes this a masterpiece is the grand totality uniting details, the flow of space from the core outward through the farthest plant box, absorbing work areas, leaving no scraps, lifting its mass proudly against the unending horizon of the prairies, a house both new and whole."

had been building houses for over ten years. But here for the first time his evolving Prairie Style reached sure maturity. In all the years since he has seldom surpassed the clear and gracious organization of space which he achieved in this cruciform plan with its skillful intersection of the cross arm volumes and the ordered grouping of openings under the broad reach of the simple hipped roof eaves. It is not difficult to understand why it became immediately an enduring model for his own and others subsequent work." John Knox Shear

"When he designed the Willitts house Frank Lloyd Wright



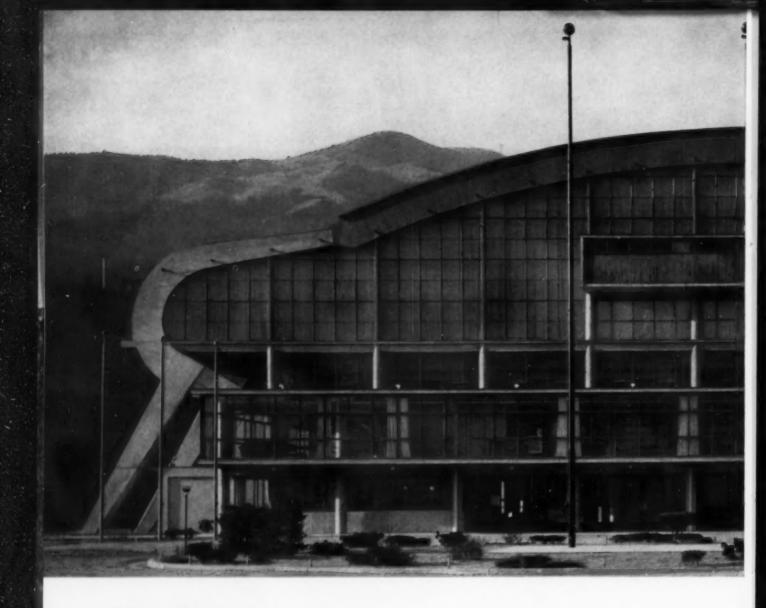
Edgar Kaufmann

MEMORIAL HALL FOR JAPANESE STEEL WORKERS

Raymond & Rado, Architects

Paul Weidlinger, Structural Engineer, in collaboration with the Japanese staff in Raymand & Rado's Tokyo office

> Exterior and interior color by Noemi P. Raymond



YAWATA ARENA

The yawata steel Mill, largest in Japan, sprawls in the midst of a drab industrial area in northern Kyushu. A pall of smoke overhangs a setting which is dominated by the huge factories and dotted by small workers' huts of wood, paper, and light corrugated metal.

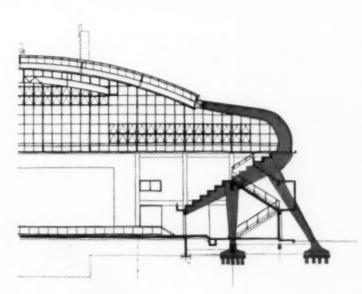
Following World War II, the first workers' union was organized — with American guidance — and the recently completed arena for sports, movies and plays was built under the joint sponsorship of the company and the union. The structure is located in a compound set aside for employe recreation. The performances it houses are extremely popular, and as a result the arena has assumed great importance in the lives of the workers.

The architectural problem was: first, to enclose—within a clear span—a large gymnasium floor and stage, together with appropriate scating; and second, to design that enclosure for maximum conditions of earthquake, typhoon and fire, since the structure lies within a hazardous belt subject to such disturbances.

The solution makes use of concrete reinforced by light structural steel sections — a technique widely used in Japan — to form a series of rigid, open U-shaped cantilever bents on two supports (see section at right) to which steel arches are hinged. The bents are regularly spaced at 5 meters (16.4 ft) and all footings are tied for earthquake and typhoon protection. The arch span is 125 ft and the total clear width to the bents is 180 ft. Overall inside height is 61 ft.

Engineer Paul Weidlinger explains that the idea behind the structural bents was "to balance vertical thrust against lateral thrust." The resulting shape is an unusual one, appropriate to its use and setting, and is frankly expressed by the exterior of the building. Interestingly enough, the form of this arena has a peculiarly oriental flavor, despite its American technological origin, which suggests again that many of the "typically Japanese" forms have sprung from a studied consideration of structure and material.









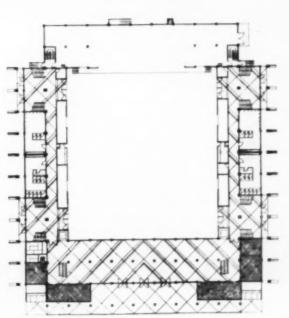
YAWATA ARENA

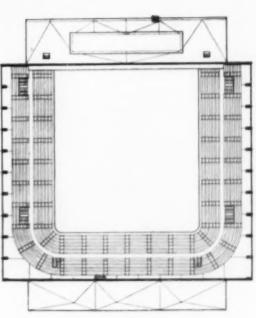


Although originally conceived as a building for indoor sports such as basketball, tennis, boxing, Judo, etc., the arena serves also for performances by choral groups and orchestras, also as a theater for drama and movies. The varied nature of such activities requires flexibility in seating and in arrangement. Normal seating capacity is 2500; but folding seats which are stored below the permanent benches (in the cross-halched areas of the plan at right) can increase it to a total of 5000 places.

All materials are native and all components are of Japanese manufacture. The main floor is of maple; the structural frame is natural reinforced concrete which is — in parl — color stained by means of an applied liquid plastic, much in the nature of a water color wash. The overhead steel is painted emerald green; the catwalk is turquoise; the panel infilling for walls and ceiling is the natural beige color of the lightweight concrete.









YAWATA ARENA

The main entrance lobby is pictured at left: the glass enclosure at second floor level houses offices for the managerial staff. The lobby floor is of black, gray and while terrazzo; the columns and sloping soffit are of natural concrete.

Architect Antonin Raymond explains that the combination of sand, cement and gravel widely used in Japan produces concrete of a pleasing warm gray color, unlike the rather cold, drab look usually associated with ordinary structural concrete. For this reason he uses the material extensively both for structure and finish. The forms assembled with traditional Japanese woodworking skill - are lined with squareedged 4 in. boards, as first used by Mr. Raymond in the formwork for his own Bucks County, Pa. house in 1923.

After the forms are stripped, the only finishing of the concrete surface consists of cutting down the fins by carborundum. Sometimes the architect specifies a transparent stain for color, but its application in no wise allers either the texture or the character of the concrete surface

ART, ARTISTS AND ARCHITECTURE



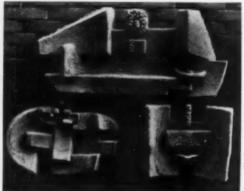




SAND SCULPTURE BY COSTANTINO NIVOLA



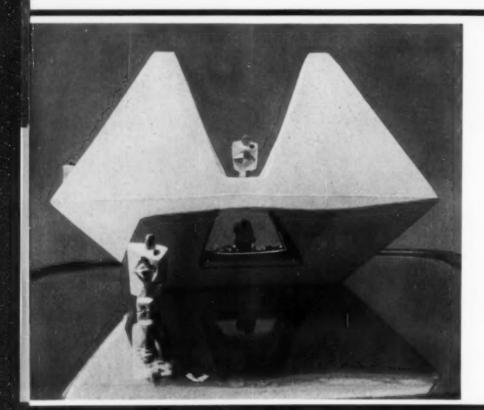
ART, ARTISTS AND ARCHITECTURE



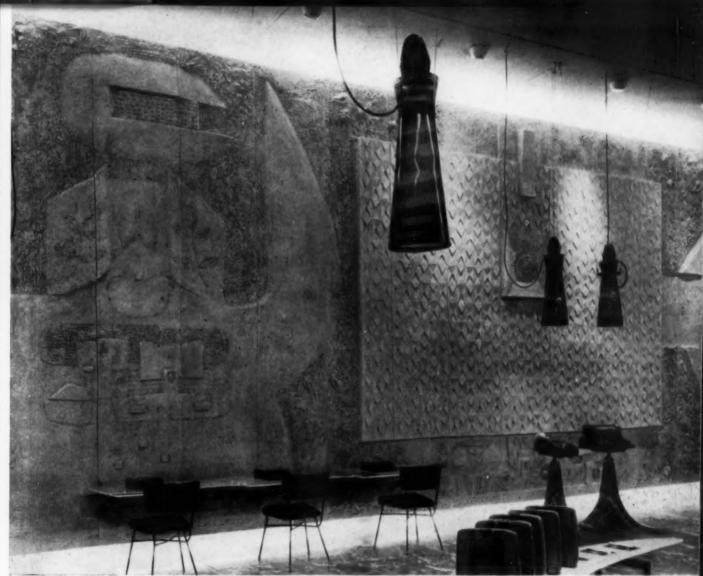
Nivola's work ranges from the enormous, free-standing projects shown on the preceding page, to the more domestic scale of the plaques above from a New York apartment house. His wall for the Olivetti showroom in New York (far right) gives a simple, overall impact, but is filled with such intricate detail as that shown at near right. Below is a scheme for a projected fountain for an American embassy in the near east. Inset is a study for a free-standing monument or wall, made of many individual blocks











Hans Namuth

By Dore Ashton

Among those currently striving for a vital integration of the arts, one of the most enthusiastic is the sculptor Costantino Nivola, who is perhaps best known for his sand sculpture wall in the New York Olivetti Showroom.

Nivola is overflowing with ideas on how the breach between architecture and the other arts can be closed and he tends to split the blame equally. In order for sculpture to be related to architecture, he feels, there must be consistency in techniques. And for him, sculpture must always be related to environment; the scale of a piece of sculpture should suggest that it belongs somewhere.

"Sculpture ought to be made with the same building material, same technique, and same carpentry as the building in order to be consistent with the scale and design." Furthermore, he adds, art should be incorporated in the plans at the same time as the plumbing as an equally important element in living. And if an artist were to work truly in terms of today's architecture, he would solve problems of time for installation, expense of materials, unions, and all the various considerations which discourage builders from incorporating art at this time.

Along with this goes a plea for a certain degree of artistic freedom. "The danger in being what they call a practical designer, is that you do things only to solve a problem. But there must be a background. An artist must do things independently of problems so that when he is given one, it is already partially solved. Art must be a disinterested act of inventing, explaining, revealing. Application is the second phase."

Nivola has developed a highly personal technique. In the sands near his Long Island home, he scoops out generous forms, which are then cast in blocks of concrete. If such bas-reliefs are to be used in a large scale building, they are created in units which can be easily lifted and assembled by workmen. For three-dimensional



The use of sculptured inserts to provide shadow interest for a building façade is shown in this study for a school soon to be built. Each insert would be individually designed. A typical one is shown above



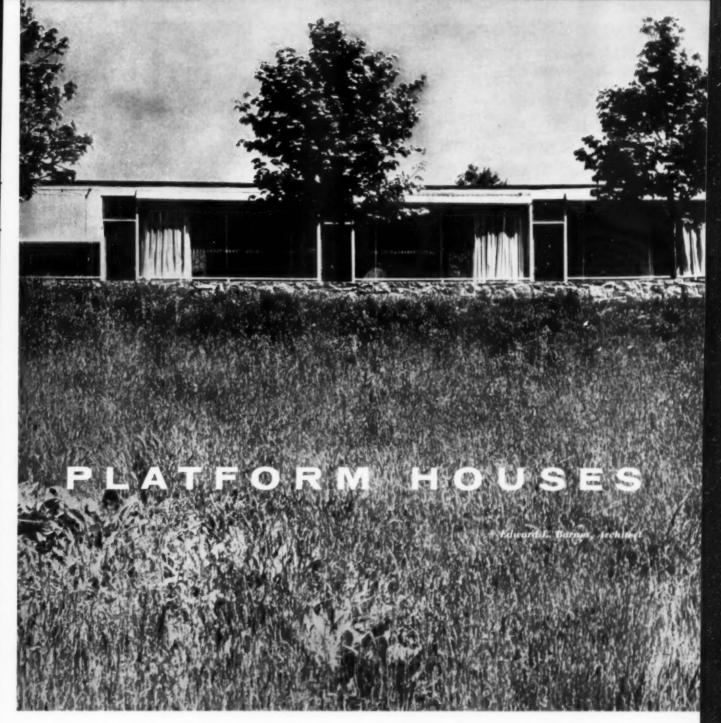
sculpture, blocks are molded separately and fitted together in monolithic, angular patterns.

In developing his style, Nivola has referred to two civilizations - he was born in the medieval village of Orani in Sardinia. His father was a master mason. "Working with my father," Nivola recounts, "I learned how to use simple materials - lime, brick, clay and sand." Later he augmented his craft by learning the art of stucco decoration. At fifteen, he was selected by a local painter as apprentice, and assisted in decorating the university in Sassari with Renaissance-derived designs. He next went to Monza, near Milan, where an advanced art school offered him a scholarship. Subsequent events brought him to America, and for a number of years he worked as a designer for publications.

His current sculptures strongly recall the great antique monuments of piled stone that punctuate the rise and fall of the Sardinian mountains, echoing their imposing scale and simplicity of technique. He frequently adds the interplay of natural elements - wind, sun, shadow, water.

A project with architectural implications that he would like to do, is a labyrinth. It would have different levels, with views seen from narrowing or opening spaces. The accent would be on sensory experience, with surprises: a corner turned, and a splash of color on a wall. or a bridge over a pool.

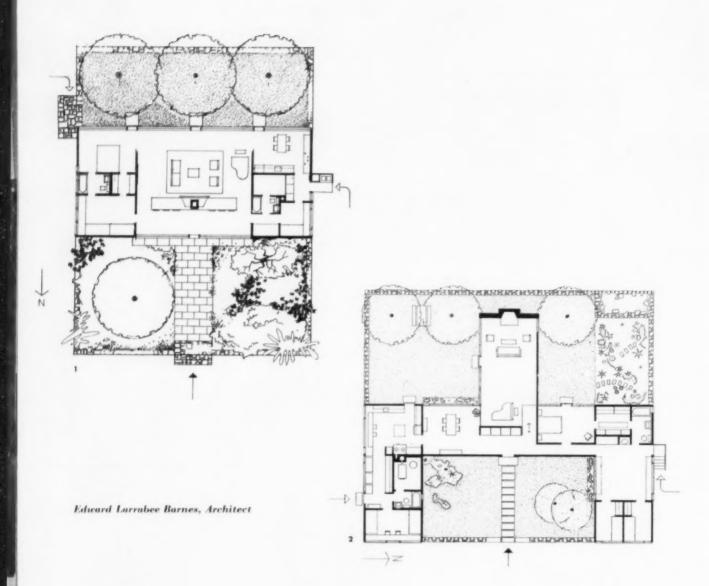
Nivola is also fascinated with the idea of monuments. as tall as buildings, to "celebrate life." One such idea is a huge, many-fired stove - a fireplace with several fires flickering against its sculptured flanks. Another is a project for his native town — a pergola that will cover the narrow streets until they converge on the large, open piazza. On the piazza would be a stone monolith and a wall - a big poster advertising nothing, but celebrating the piazza.



A NEW NOTE has been struck in the familiar debate on whether a country house should merge with its setting, stressing indoor-outdoor relationships—or be set crisply apart from the landscape. Edward Larrabee Barnes has developed a series of schemes which, in effect, achieve both qualities. Actual outdoor living areas and gardens are lifted above the surrounding terrain onto a podium or platform with the house; these areas are carefully cultivated, while the rest is left more or less as is. Thus the integrated gardens and house do stand apart. On the next few pages, we present several of these houses with Barnes' comments.

The house and nature: "the contrast between untouched nature and the area for living is dramatized in the platform plan. A house should never melt completely into the landscape — it should retain its identity as a habitation and have its own crisp organic form. To me 'organic' does not mean that the house sprouts out of nature like an over-fertilized plant."

The house and garden: "in the platform plan, the garden is conceived as part of the house. Its wall is an extension of the house foundation; enclosed terraces complement inside spaces. Shade trees make a leafy outdoor ceiling."



1. Edward Larrabee Barnes House Mount Kisco, New York

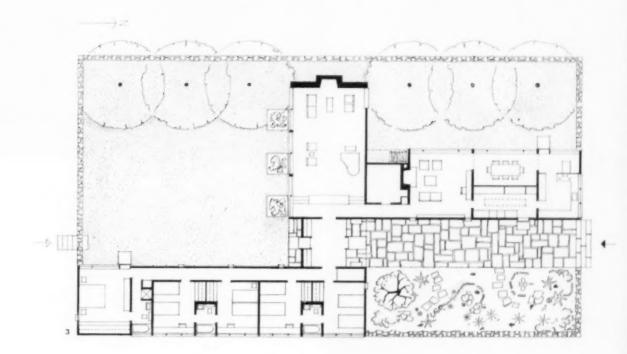
"There is only one level in this hilltop house. The entrance garden, house interior and rear lawn are all flush with the top of the stone wall. Consequently, one is more conscious of looking down from the platform than in the other houses. Everything is conceived as one space; when in the house one feels the fireplace is not just the center of the living room, but of the whole platform. Open planning and wide vistas make one always aware of the whole house and garden - yet it is only a small house for a little family."

2. Robert Osborn House

Salisbury, Connecticut

"The outdoor spaces in this house are carefully integrated with the inside plan. The raised entrance court is level with the top of the stone wall and forms a classic entrance. The living-dining terrace is sunken to living room level, and one can sit on the surrounding stone wall. A stone table for outdoor dining is under the shade trees. The north court, with a garden and raised platform for sculpture, is a private area for the master bedroom. Staggered wings bring south light to all important rooms."





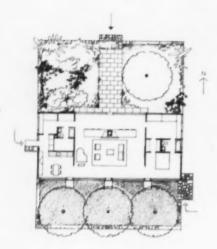
3. Theodore Marsters House Litchfield, Connecticut

"This house sits on a bare hilltop with a sweeping west view — hence the line of shade trees. The living room faces a large square lawn enclosed by a low stone wall. Dining room, sitting room and breakfast alcove look west over a shallow dining terrace. Front and service doors open onto the entrance walk. This is not only handy, but it means that all functions including the service entrance are contained on the platform—and everything around can be left untouched. Somehow, this complete containment is very satisfying."

4. Allen Buck House Salisbury, Connecticut

"Built within a very tight budget, this 1100 sq ft house, with its little terrace and flower boxes, is set on a three-foot high, painted concrete block foundation. The continuous window seat can sleep six guests, and makes large amounts of furniture unnecessary. The front terrace is kept neat and formal; the rear terrace, opening from kitchen and children's room, is for family living and outdoor dining. Each terrace has a shade tree, access to surrounding land. The house has been called a 'houseboat in the fields'."

PLATFORM HOUSES







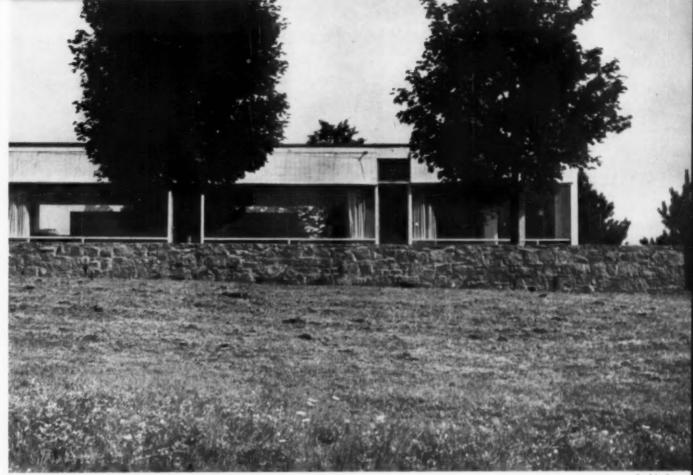


Edward Larrabee Barnes House

"The Plan: bedroom and kitchen can be shut off by sliding doors, but partitions always screen the areas from view. A storage wall separates the living area from front hall—such a gallery makes coming into the house more of a pleasant ritual."

Landscaping: maintenance is minimized. Only rough mowing is necessary for land off the platform. On the platform, the lawn can be mowed by hand in fifteen minutes; grass is flush with the stone, eliminating clipping. The raised entrance garden is planned to look well winter and summer — Myrtle and ivy are used as ground cover with flowers peeking through in season.

Shade trees: three Norway maples cost a fraction of what a well detailed porch would. And trees let through winter sun, summer breezes. Later, bottom branches will be clipped to make a flat leafy ceiling."

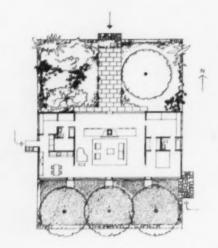


Ben Schnall

Edward Larrabee Barnes, Architect James Fanning, Landscape Architect Benjamin Spivak, Heating Engineer August Nelson, Contractor

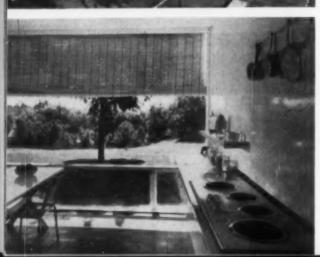


PLATFORM HOUSES









Edward Larrabee Barnes House

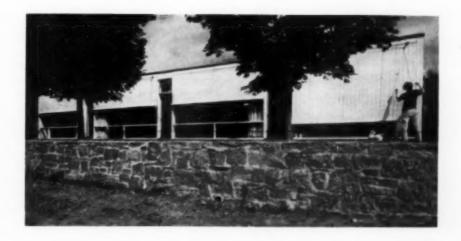
"The living area: ceilings are white acoustic tile, walls white plaster. Such an interior is always changing: it looks pink when lamps reflect off the reddish-brown tile floor, green when sun comes through the trees, and soft gray in a snowstorm. The floor is radiant heated.

The kitchen: we like to eat in the kitchen—only now the kitchen is not tucked off in a corner but faces the living terrace with full height windows and nice detailing. It is treated as a major room. Without a servant living in, such a solution is delightful.

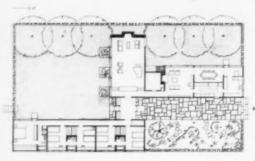
Outside blinds: the glass is protected from sun on the outside. On hot days, the house can be closed in like a slat dwelling. When the trees are bigger, the blinds won't be needed in summer. Such blinds have long been used abroad; they have wind stays, and a locking device that eliminates the need for cleats."

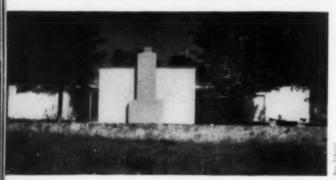


Edward Larrabee Barnes, Architect













PLATFORM HOUSES



With larger, multi-wing platform houses, several courts are possible. Each of the schemes shown on this page have three. At top, the house for Theodore Marsters uses a zig-zag plan to achieve an informal arrangement of courts. Below, the house for Robert Osborn is quite symmetrical in layout.

Future platform houses: "on future houses, I would try to provide a service court on the platform so that functions don't 'spill off'. It would also be nice to be able to walk from one court to the next without stepping off the platform. I would like to see the shade trees clipped, and the gardens even more lush. On a large house, I would use overhangs and trellises to supplement the shade trees, and perhaps define the living platform at an upper level."

Edward Larrabee Barnes



Joseph W. Molitar

HIGHLY FUNCTIONAL PLANT FOR HELICOPTERS

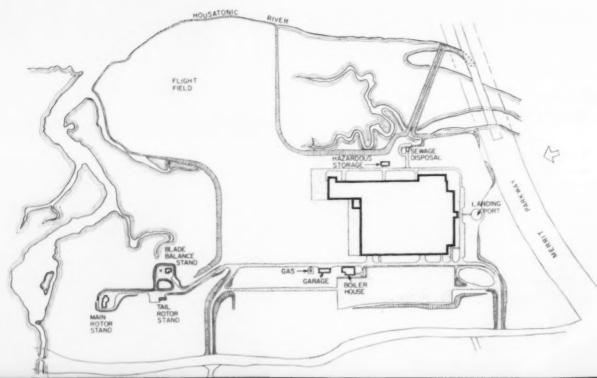
Manufacturing Plant for Sikorsky Aircraft Division, United Aircraft Corporation Stratford, Connecticut

F. A. Fairbrother and Geo. H. Miehls, Architect and Engineer Albert Kahn Associated Architects and Engineers, Consultants

RABELY DOES functional building design involve so many different complications as the architects and engineers encountered in this manufacturing plant for helicopters. Though the plant is large (800,000 sq ft of floor space), mere size was less of a factor than the complications of helicopter manufacture. One section, for example, has a height of 36 ft and a clear span of 180 ft. Site preparation involved the moving of 1,450,000 cu yd of material. Then there were some highly special requirements for air conditioning and ventilation, for fire protection, and other special needs.

Comprehensive survey of many other areas throughout Connecticut and adjacent states preceded selection of the Stratford site as most closely meeting the requirements for the type of installations contemplated. Terrain of the acreage selected included farm land, sandy gravel knolls and hills, rocky and swampy back water areas. Final grades were set to provide a maximum of fill material to level and fill the greatest possible percentage of the site. Sizeable hillocks were cut down to provide fill in the swampy meadows adjacent to the Housatonic River and to bring the ground to the eleva-





tions desired for the buildings, parking lot, roadways, possible future extensions to the North and East, flight field, and access roads to various test stands.

The main manufacturing building is 820 ft long by 700 ft wide, with an extension to the north of 180 ft by 300 ft which houses the hangar area. An attached office building along the south end of the plant is two stories high and has a basement area 60 ft wide by 520 ft long. At the northeast corner of the hangar is a two-story projection 80 ft long by 40 ft wide which is known as the pilots' ready area.

Construction consists, generally, of steel columns and trusses. Column spacing in the low bay area forms bays 40 ft by 60 ft and 40 ft by 70 ft with 16-ft clearance to the bottom chords of the trusses. The hangar and final assembly area, extending along the east side of the building, has a clear height of 36 ft under main roof carrying trusses and a clear span of 180 ft in width. Orville Wright could have made his epic first flight in the 180 ft clear span of this high bay — going across the bay, not down its length.

Exterior walls are of face brick backed up with concrete block to a sill height of 8 ft, aluminum projected sash, and insulated fluted aluminum siding. The roof, some 18 acres in area, is constructed of poured gypsum and composition roofing.

Toilet facilities are conveniently spaced throughout the first floor of the manufacturing area with foremen's offices located above. Locker rooms, plant protection headquarters, and employment facilities are located in the basement area near the manufacturing employees' entrance. The basement area and all the rooms off it are of extra heavy blast resistant construction. In all, it is an area about 120 ft by 200 ft overlaid with 12 in of reinforced concrete. One end of the administration building (about 60 ft by 180 ft) has received similar treatment. In an emergency the two areas could shelter approximately 5000 people.

The two-story area and the blade room in the factory section are completely air conditioned. The blade room

















requirements are definitely fixed as to temperature and humidity throughout the entire year. In general, the air conditioning equipment for both the office area and the blade room are identical, the variations being in the control limits. The system consists of air filters, water cooling coils through which outdoor or recirculated air is drawn by a motor driven fan unit, and the fan unit which discharges the air through zone coils and ducts to various parts of the rooms. The requirements of the distribution system made it essential to provide different air temperatures around the outer zones near the exterior walls than are required for the interior areas where the heat gains and heat losses throughout the year are nearly constant.

Although the blade room is one completely enclosed area, separate zones are provided sectionalizing this room to permit different degrees of temperatures on the supply air system to balance the heat release given off by various pieces of equipment, thus making it possible to obtain the same room temperature throughout irrespective of the heat liberated by certain pieces of equipment.

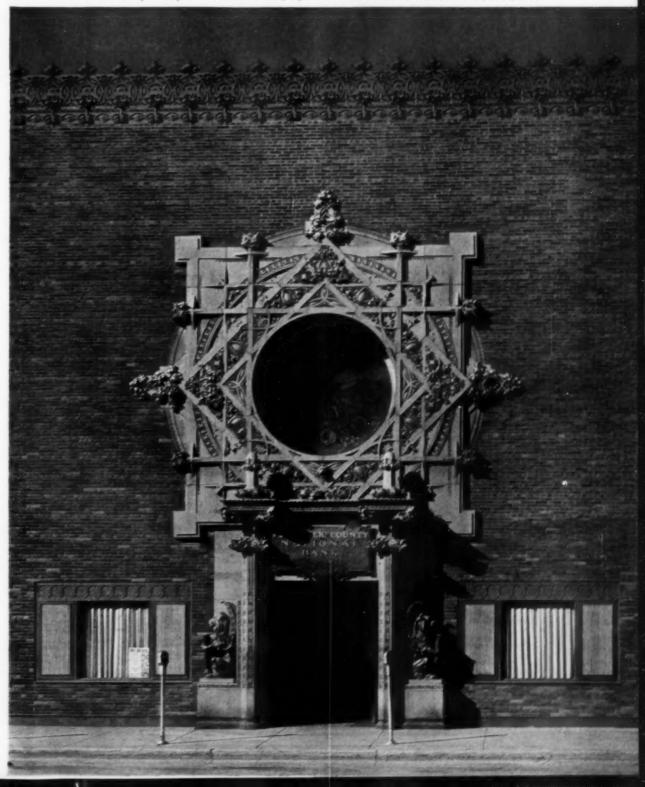
The fire protection consists, generally, of complete wet pipe automatic sprinkler protection throughout the manufacturing building, with the exception of the transformer rooms, fan rooms and light hazard administration facilities.

Special hazard protection, consisting of automatic deluge systems of open type "water spray" sprinklers, are provided for the extinguishment of hazardous fires and the dispersion of flammable vapors or liquids within the aircraft hangar and the final assembly paint spray booths. Certain hazardous areas are protected by a complete wet pipe automatic sprinkler system, others are served by a "two-shot" high pressure, automatic carbon dioxide fire extinguishing system.

The exterior protection consists of underground fire mains enclosing the manufacturing building, with fire hydrants and roof standpipes provided at strategic locations.

LOUIS SULLIVAN

Authentic American masterpiece: Louis Salliran's distillation of color, precision and climactic glory in Merchant's National Bank, Grinnell, Iowa, 1914



The expression of a vital whole was to Sullivan's mind the real task of architecture - ornament came in only to clarify this expression. In these typical window walls Sullivan's deeper preoccupation with function and structure can be traced. From left to right: at the Auditorium, 1889, Adler and Sullivan (heeding their client's fondness for Richardson's Field Building) turned to the superimposed arcades of Roman aqueducts as the ordering theme of stone-clad façades; six years later the terra cotta arabesques on the Guaranty Building emphasized the soaring verticality and uniform office bays of steel cage structure; at the century's turn Sullivan stepped ahead again with a supremely balanced statement of cage structure individually framing in ceramic these ample apertures of Carson, Pirie, Scott and Co. above foaming iron ornament. Below: two 8-ft column bases from the Jewellers' Building, 1881, will be in the Chicago Art Institute exhibition



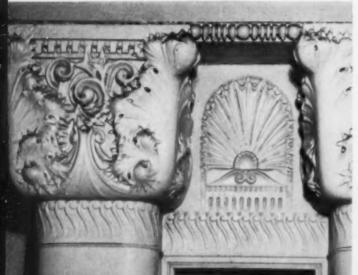


In Celebration of the 100th anniversary of the great master of the "Chicago School," the Art Institute of Chicago will present a major exhibition, Louis Sullivan and the Architecture of Free Enterprise.

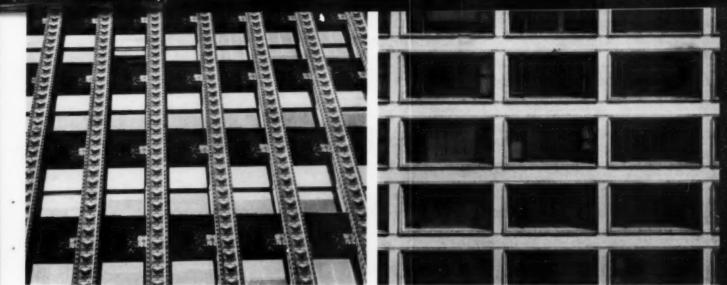
The first major architectural show at the Institute required special funds which were donated entirely by Chicago architects and builders, making it a truly civic demonstration. Though Sullivan's last years, like those of many geniuses, were spent in misery and neglect lightened by only a handful of faithful admirers, Chicago gave him opportunity that brought fame to both the architect and the city. Now it is the first U.S. city to celebrate in a centenary exhibition one of its own citizens as a great architect.

The exhibition will be held from October 25th to December 2nd and will show Louis Sullivan's architecture in five thematic sections: Sullivan's Influence Today will introduce the visitor to the big concepts, still guiding architecture, that Louis Sullivan so effectively realized in works and words; Formative Years will show what









Photos by Len Gittleman, Inst. of Design, 1.1.T.

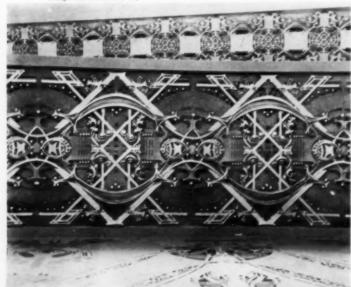
led Sullivan toward these concepts, what nourished his art and what he as a beginner had to fight; Adler and Sullivan will be devoted to the great buildings designed in the partners' office, giving credit to the several collaborators involved - the architects Wright and Elmslie, the builder Mueller, etc. - this will, necessarily, be the largest section of the show; then follows Sullivan Alone with those few but brilliant expressions from the long years that led through neglect and bitterness to Sullivan's wretched, lonely death; a small section on Sullivan's greatest enthusiasm, Ornament, will compare his work in this field to that of his contemporaries. showing why Sullivan attached such importance to this element, and why this side of Sullivan's insight is of especial interest once again to the leading architects of our own day. Throughout, the exhibition will demonstrate Sullivan's architecture for commercial use.

Large color projections and black and white photographs will be accompanied by significant quotations from Sullivan's influential writings. Actual samples of Sullivan's rich ornament will bring sculptural body and depth to appropriate sections throughout the show, and the whole will be approached through an entry where the spirit of Sullivanian ornament will be recreated in a total life-size surrounding. The photographic material has been drawn largely from the recent surveys conducted by John Szarkowski and from Richard S. Nickel and others under Aaron Siskind at Illinois Institute of Technology. Drawings will come from the Institute's Burnham Library and from Frank Lloyd Wright; Professor Hugh Morrison, Sullivan's distinguished biographer, is opening his files of notes and documents to the exhibition's organizers.

A special catalogue and a new publication of Sullivan's work in photographs by John Szarkowski from the University of Minnesota Press will be on sale.

The exhibition will be directed for The Art Institute of Chicago by Edgar Kaufmann; John Szarkowski is Photographic Supervisor; Daniel Brenner Installation architect; catalogue design by Mrs. Victor Zurcher.

Chicago Architectural Photo. Co.



Ornament, the flowering of Sullivan's art, was enriched by reference to earlier rare and elaborate skills. Details show such exotics mastered and reintegrated into everyday midwestern usage through the insight of a great architect. From left to right: in the lobby of the Auditorium Hotel, Chicago, 1889; on the corner entrance of Carson, Pirie, Scott and Co., Chicago, 1903; soffit of an arch inside the National Farmers' Bank, Owalonna, Minnesota, 1907. Byzantine, Gothic and Saracen artists would have welcomed their American compeer. His contemporaries of the cornbelt mightily admired in these buildings the proper opulence of a democratic society expressed with personal verve

LOUIS SULLIVAN

Beauty rising new-born from Lake Erie: the Guaranty Building delivers suavely the powerful impact of modern business efficiency

The Individual School

and the Community

by Frank G. Lopez, A.I.A.

Schools, it has long since been said. are first of all for children So that this will not be forgotten in the discussion that follows we illustrate this short introduction with photographs of children creatively engaged at a California school which is more fully presented in later pages.

And schools are for adults too, even for those whose children are grown beyond school age or who have none. It is not just because we pay taxes that this is so. More than any other type of building except the houses people live in, its schools now serve to complete a community. In fact their importance has so increased in the past couple of years, our own surveys show, that schools have become the prime concern of the average American archi-

Why? There are any number of reasons. Increasing - almost formidably increasing - use of family automobiles today encourages household shopping, movie-going and the like at more distant, concentrated, efficient



centers than the local, usually more expensive shops where there is often less freedom of choice. Transportation by , auto, rapid transit, long-distance bus or commuter train has contributed to the growth of our dormitory suburbs; the places where we work are seldom

within walking distance. On the other hand, schools - now so much a matter of public, political and professional concern - remain a local necessity. The preferred means of moving children are Shank's Mare or the short-run school bus. Again, the dominant factor in the school becomes evident: the child.

And again, the entire community is affected by the nature of its school plants. It has become common indeed for the school to function as a community center in many ways: as a facility for recreation indoor and outdoor, passive and active; as an adult education center; as, usually, the largest undertaking of its kind in the community and hence as a source of both pride and increased taxes. Besides these somewhat obvious impacts on its neighborhood the school has other effects intangible and tangible. To the rest of the world its schools mirror a community's taste and its concern for the education of its young. As housing continues to expand and the number of children born increases, more and more communities are being judged by their schools, a practice which contributes directly, as new householders select their dormitory homesites, to more houses, more children - and more schools. Maintaining high standards for schools might be considered to have its penalties, too; and in some cases this has been true. However, when one digs into a situation of this kind some other aspects of community structure are nearly always found wanting; there are really very few communities that literally and absolutely cannot finance their schools. Perhaps the tax structure is at fault, or zoning has been unwisely accomplished (if it exists), or there is too low a statutory debt limit, or other legal restrictions are too severe.

These, because changing them is a cumbersome, time-consuming process,

are too often considered fixed conditions. On the contrary, there is instance after instance of an aroused citizenry succeeding in changing them, by quiet action or after fierce activity. As the motive for action schools have thus been the means for improving the community's fiscal and legal position. Attempts by super-agencies - the state, for instance - to alleviate rather than cure such situations, for example by the paradoxical device of declaring a solvent



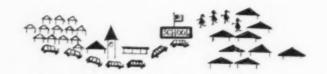
school district "insolvent," can be seriously questioned insofar as they substitute an easy "out" for the kind of positive action that will insure future civic health.

There are also matters of esthetics which are intensely personal to all the individuals in the community. How "Colonial" should today's school in New England be? How Southern Georgian in the Piedmont? How ranch-housy in California? Or should it look like a modern school in any setting? Another intimate concern is safety from traffic hazards, which relates not only to public highways but also to traffic within the school campus.

There may seem small items of secondary importance, but lack of attention to any one of them can disrupt an entire program. Less likely to have this effect on a community because it is more difficult for the layman to grasp is the relation of school buildings to the physical and economic growth of the normal community. The school is a positive force in city planning. At best, the location and the nature of school plants can be employed to direct community growth; examples of this are many in the accompanying article on the Charlotte, N. C., school system. The least that is desirable is establishment or improvement of schools to alleviate civic faults; in some measure all schools serve this function. Sometimes the situation becomes a mad race to catch up; the story of the Bellevue, Wash., schools that closes this study might have been of that kind had not persistent, effective action been undertaken by Bellevue's growing population.

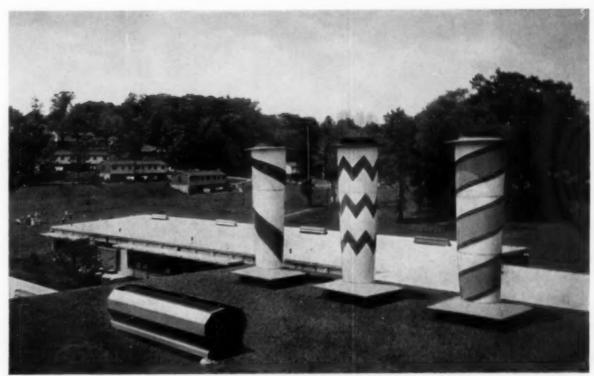
In between these extremes are all degrees of inter-action. Painstaking research corrected a difficult situation in Stamford, Conn.; and here the architect accomplished much more: his delightful conception has raised the tone of a neighborhood substantially. The transformation of a useless swamp into a beauty spot, the creation of a loved institution, are no mean achievements. So also has the California example lifted its community's sights. The child in the photograph below, completely absorbed in creating a masterpiece, is a far cry from the juvenile delinquent whose vandalism at other schools can be outrageous. The child is copying a huge, colorful, imaginative mural which the architect inspired, paid for, and gave to the school. There was no money in the state-determined budget for the mural, but the architect knew how badly it was





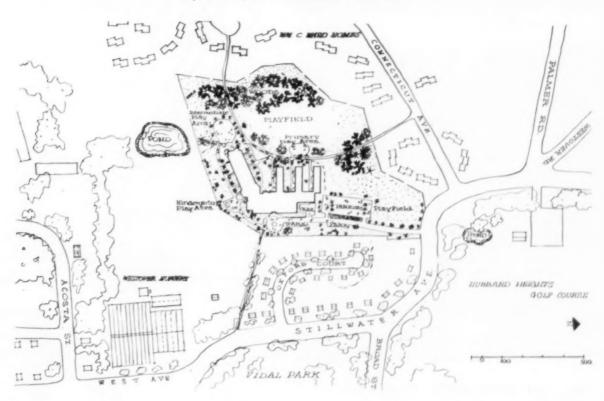
Westover elementary school in Stamford, Conn., complements and virtually completes a small residential neighborhood created by a public housing development, Wm. C. Ward Homes, and a private development of one-family houses on small lots. It is colorful; it is advanced in many respects and entirely compatible both with its neighborhood and with the city's educational concepts: it is a school that shows when you visit it that the pupils, the staff and the community appreciate what they have.

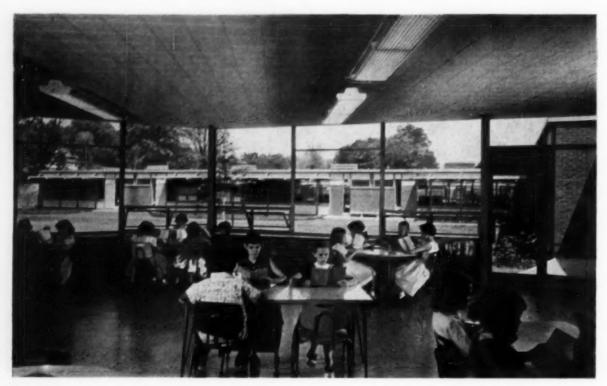
It sits in a hollow between the two housing developments on 15 acres that were formerly a swamp — on what was called unbuildable land. All its pupils can walk to school. After much study the architect advised that there was one quadrant on which a building could be erected and that, considering the site's reasonable cost, drainage and fill would not be unduly expensive. The Connecticut Power Company agreed to supply fly-ash to fill under playfields. Footpaths connect directly with the children's homes. The good trees were preserved, including all the dogwoods.



Joseph W. Molifor

William F. R. Ballard, Architect; Lanier & Levy, Mechanical Engineers; Fraioli-Blum-Yesselman, Structural Engineers; Ralph Eberlin, Civil Engineer; Marianne Macmaster Landscape Architect; Theresa Kilham, Color Consultant





Joseph W. Malitar

It should also be noted that Westover, built in 1954-55, cost \$13.32 per sq ft, \$925.47 per pupil, when average Connecticut costs for 1950-53 were \$15 to \$16 per sq ft, \$1200 to \$1250 per pupil. It has just under 70 sq ft per pupil (state average, 77-78). Of its total area, 68 percent is instructional; 15 per cent circulation; 6.4, service; 3.7, administration; 6.9, storage and boiler room—recognizably more efficient than the national average. Cost of construction was \$904,700; fees, equipment, land etc added \$263,500; total, \$131,800 less than the budget.



Westover Elementary was designed for 820 small children as an efficient educational plant, as moderate in cost as sound structure, easy maintenance and pleasant appearance would permit. This was the architect's first school. He studied the School Board's program, which had been carefully prepared; he visited many other schools and examined school building literature. The result is a buoyant, simple, onestory building of glass, brick and concrete block. Characteristic are the candy-stick-striped boiler and incinerafor stacks covered with porcelain enamel. The library (opposite page) in the center of the building affords a view across grassed courts to and through all three primary wings. In these there is no wall separating corridors and classrooms. The intermediate wing has a double-loaded corridor; all rooms have outside doors. The playroom-cafeleria and the auditorium, both much used by adults, are easily accessible after school hours. Note in plan such refinements as the teacher's lounge, convenient yet remote from both office and classrooms.



Above, second-grade wing

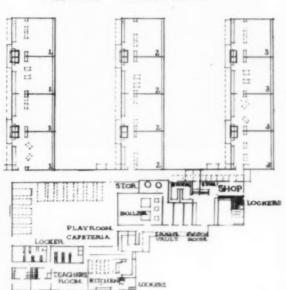
Joseph W. Malitai



Abore, service areas; auditorium, playroom in distance Below, first-grade wing



PRIMARY CLASSROOMS



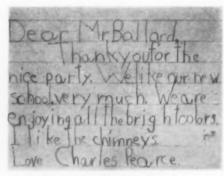


Joseph W. Malitar

Kindergarlen; notice quality of children's work displays. Floor is radiant heated in both kindergarlens

INDIVIDUAL SCHOOL AND COMMUNITY: STAMFORD, CONN.

Westover's classrooms all have two walls of floor-toceiling tackboard covered with washable fabric, exterior walls of steel windows (non-bearing) with cementasbestos panels top and bottom; south window walls have slatted aluminum exterior sunshades and upoperating interior wood slat shades. Classrooms are supplied with fresh air by vents under windows; the regimented roof exhausts have porcelain enamel jackets in various bright colors. Most of the built-up roofing is surfaced with white gravel; the boiler-room roof is gray; auditorium and playroom roofs, red. Roof colors were carefully studied because the school sits in a hollow and the view from above is important. Structure is wallbearing with precast roof plank on steel joists. Floors are vinyl tile with some hardwood and ceramic tile. Heating is hot water with finned classroom radiation.



One of many "thank yous" for a party the architect gave when school opened



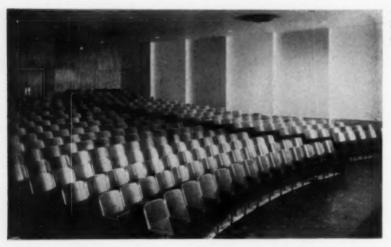
Corridorless primary wing; gay colored cubicles screen sealing areas





Intermediate wing; corridors wide and skylighted at groups of room doors





The Westover auditorium (446 seats), intended for and intensively used by both the school and the community, accommodates no other function. It has a sound-distributing plaster ceiling, sloped floor, angled walls to prevent reverberation and provide light recesses, a large stage. Below, library looking towards woods; court between primary wings





JOSEPH W. Molin

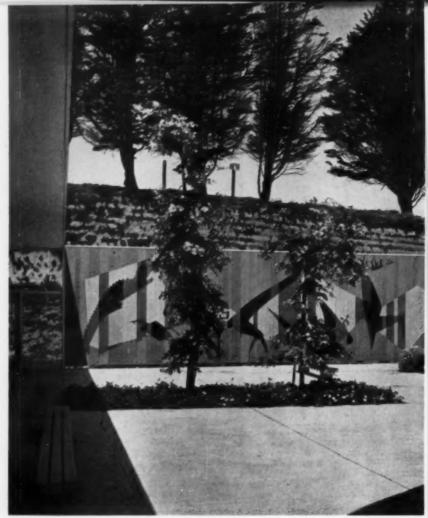


THE INDIVIDUAL SCHOOL AND THE COMMUNITY

THE INDIVIDUAL SCHOOL AND THE COMMUNITY: DALY CITY, CALIF.

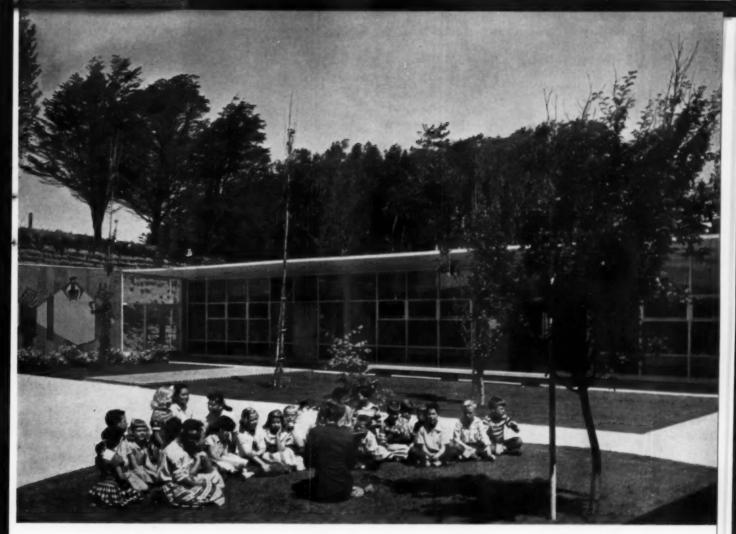


Olympia Primary School, recently completed for a San Francisco suburb, departs from the local norm in several ways, one of them a colorful mural which the architect gave to the school to emphasize the importance of art in education. Judging by class activity (below) and the inspiration it furnishes (above), the gift is amply justified

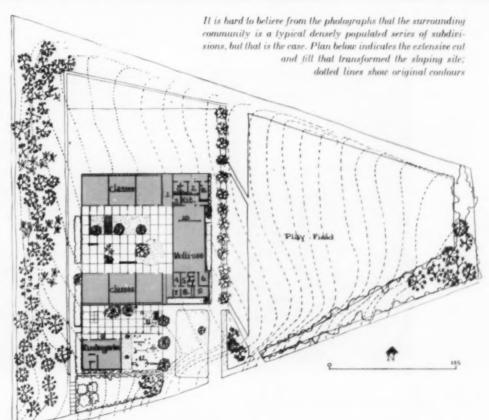


Rondal Partridge





Architect:
Mario J. Ciampi
Muralist:
Ann Knorr
Landscape Architect:
Lawrence Halprin





Above, another drawing inspired by the outdoor mural; right, children's art work of the same high order displayed on the multicolored, random-width board fence behind the all-purpose room's portable stage. Below, a typical classroom. At intervals in the window walls facing on the court are translucent colored panes



THE INDIVIDUAL SCHOOL AND THE COMMUNITY: DALY CITY, CALIF.



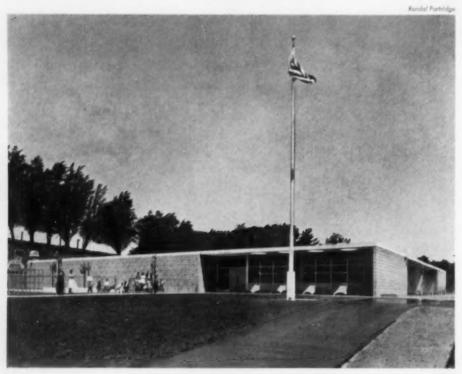


Rondol Partridge

Olympia primary school, though it is recognizably of a definite type, responds in several ways to the special needs of the community it serves. The architect had previously designed several rather orthodox schools for the district; out of that experience and a re-evaluation of the school building problems of Daly City's increasingly dense population came some fresh decisions, for which state approval had to be obtained.

Basically Olympia is a home school unit, kindergarten through third grade, a summer recreation facility and a center of community activity. In addition, the problems of maintenance, vandalism and exposure to winds and fog from the nearby Pacific Ocean became important design factors. The cost of maintaining wood and stucco in the school district, the observation that classroom lights burned almost continuously despite careful design attention to daylighting, the need for a lively, joyous building in which the community could take pride—these were some more factors. Hence the building has a concrete roof deck erected by the lift-slab method; its exterior walls are of textured, reinforced concrete blocks painted a pleasing color; it turns inward to the surprise and delight of its central court, shutting out the monotone subdivisions that surround the site; its classrooms have entire luminous ceilings; it sparkles throughout with light and life and color that are a far cry from both the usual drab scientific interpretation of lighting requirements and the dead level of speculative housing.

THE INDIVIDUAL SCHOOL AND THE COMMUNITY: DALY CITY, CALIF.





The upper picture shows the school as it is seen from Daly City; the multi-purpose unit is at the right. The lower view looks out over the courtyard and the school building and the enclosing sea of suburban dwellings. Olympia's cost, excluding fees, site work and mural, amounted to \$12.75 per sq ft — comparable to or less than the cost of some of the district's more conventional schools. Totals were: construction, \$176,950; site work, \$41,100. For this relatively modest outlay the community received a durable building easy to maintain, finished inside in natural woods and bright colors, one that stimulates a justifiable pride

CHARLOTTE, NORTH CAROLINA

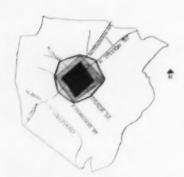
Charlotte. N. C., is a confident city, proud of its rich past, sure of its aims. It has grown steadily since its founding in 1766 at the crossroads — now Trade and Tryon Streets — where the county's log courthouse stood. Its schools have done more than keep pace with Charlotte's growth; until very recently the city had no professional planning agency, yet in its continuing expansion there has been an orderliness, a sense of direction to which the schools have at some times positively contributed and from which they have often received impulses. Educationally the city's goals are high, and as they are neared are constantly being raised; as a matter of course but not complacently education is granted its important position.

This happy educational climate is one reason Charlotte's school plants, by and large, are of a consistently high quality hard to match over the full width of any comparable city in the country. Another reason is advance educational planning of sufficiently long range, on bases sufficiently sound, so that seldom has the school administration been caught napping. Another is the talent displayed in the friendly yet stiff competition among the city's architects, virtually all of whom have been engaged in the school building program; still another, the cooperation between the school system and various other municipal agencies. Nor can Charlotte's excellent economic health be ignored as an underlying cause as well as, in part, an effect. To citizens of Charlotte, to become a member of the school board is quite literally an honor, carrying with it responsibilities for discharge regardless of politics; to Charlotte's architects, schools are satisfying commissions. How did this come to be? What is the present nature of the schools? What of the future? As Charlotte's metropolitan influence expands, inevitably the schools of surrounding Mecklenburg County are seriously affected; is this problem being solved to the satisfaction of both?





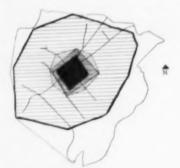




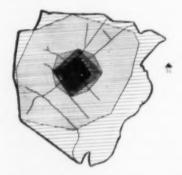
Year: Population:

1855 1500

1877 5000 1885 8400



1907; population, 28,000



1928; population, 82,100

SCHOOL AND COMMUNITY: CHARLOTTE, N. C.

Charlotle's area and population (currently about 150,000) have heretofore grown fairly steadily; but now on the city perimeter there are 83 new, large developments totalling about 14,000 lots on which in mid-September stood roughly 4000 housex completed or under construction. In 1949-50 Charlotte had 30 school buildings (capacity, 17,610 pupils); following a program then formulated, 21 new schools have since been built (15 elementary, 4 junior high, 2 senior high; capacity, 11,560) and nearly every existing building has been added to or rehabilitated. The program in surrounding Mecklenburg County has been about two thirds as large. A new 5-year city-county program is just starting.



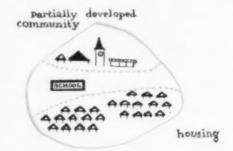


Charlotte embarked on its current school building program after World War II. The money for new buildings has come primarily from bonds issued by Mecklenburg County, with the proceeds prorated between the city and the County. Since 1946 a total of \$23,795,000 has been sold in four issues; no issue has been voted down at the polls; a fifth is in prospect this fall. As the amount issued has increased so have the County's assessed valuations. In 1952 there was a much-needed property revaluation. The statutory debt limit is 5 per cent, and (counting in debt service payments) all bond issues after 1946 have been close to the limit; in other words, the debt-tolimit ratio has been quite constant. Since 1946 the city has spent on construction nearly \$17 million. Most of this has come from bond issues, a small share is capital outlay and another portion, state grants. In addition, Charlotte has spent about \$1 million of capital outlay funds on modernizing, renovating, re-lighting, rewiring, etc., in old buildings.

Business of this magnitude might well have appalled the Charlotte schoolmen of earlier days, though judging from what they did accomplish one suspects they would nevertheless have tackled it. Charlotte was settled in the 1750's, mainly by Scotch-Irish Presbyterians, sturdy dissenters whose sincere interest in education is in all probability an underlying reason for the high order of its educational plant, administration and policies, and for the high local re-

gard for the teaching profession as well as for the architects. As in other states, North Carolina's early schools were private academies; in 1863 a bill to create grade schools was introduced in the legislature by Mr. Harris of Cabarrus County, near Charlotte. Politics and the Civil War interrupted; in 1875 the necessary tax bill was passed, but not until May, 1880, was it ratified by Charlotte's voters. A few weeks later the city's Board of School Commissioners was organized; in March, 1882 it picked its first Superintendent of Schools, T. J. Mitchell of Mt. Gilead, Ohio, who went to the best professional school he could find - Oswego, N. Y., Normal School — to get a core of well trained teachers. The following September two public schools opened: one in the barracks of the old Carolina Military Institute, and a school for Negro children in a tobacco barn on Fifth St. A teacher shortage existed in those days too, and one of Superintendent Mitchell's first acts was to bring Miss Eva Kellogg from Boston to head a teachertraining division.

Some of Charlotle's recent schools have helped accelerate sluggish though desirable community growth. Shamrock Gardens Elementary, started in 1950 and added to in 1952 at total cost of over \$350,000 (R. Edwin Wilson & Assoc., Archts.) is an example. The surrounding development had progressed very slowly; with the adrent of the school it was rapidly built up.



Shamrock Gardens Elementary







Joseph W., Malitar



Central High



Myers Park High



Elizabeth Elementary

TYPICAL PROBLEMS

To bring an entire school system up to date involves rehabilitation of and additions to existing structures as well as new buildings. In 1946 Central High got a \$17,400 field house (C. W. Connelly, Archt.); it has also been thoroughly rehabilitated. Myers Park High, designed at about the same time but built in stages (total cost well over \$1 million; J. N. Pease Co., Archts.) as one of the country's first campus-plan secondary schools, has attracted national attention. At Elizabeth Elementary a \$220,000 classroom addition (Biberstein, Bowles & Meacham, Architects) was accommodated on a small, difficult urban sile. Ashley Park Elementary, started in 1950 and enlarged in 1952 (total, over \$375,000; D. M. Mackintosh, Archt.) was brand-new, on a large sile; in it new educational ideas began to flower architecturally.

Ashley Park Elementary



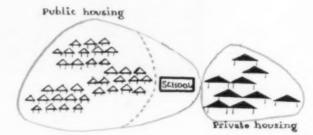
In early days Charlotte's boys and girls were taught in separate classrooms; in the old South Graded School, the south side of the building was the boys', the north, the girls'. There were some great teachers in those days: Miss Sally Bethune, Miss Kate Shipp, Miss Lillie Long are recorded as being remembered with respect and affection. They stayed with the schools for a long time under a succession of superintendents. Supt. Mitchell became President of Alabama State Normal in 1886; J. T. Corlew, a former Charlotte school principal, was superintendent until 1888; and then came Dr. Alexander Graham, who had been superintendent at Fayetteville since those schools opened in 1878. Dr. Graham thus had a rich background of experience in public education, which was just getting under way in the state; the policies he initiated have of course been modified as educational theory has advanced; but to the strength and character he built into Charlotte's schools is due much of their present vitality.

Under his aegis the graded school system developed apace. His interest in manual training and mechanical drawing led him on a search for a promising teacher, whom he found in Mr. C. C. Hook of West Virginia, the father of the present Walter W. Hook, F.A.I.A., of Charlotte, one of whose schools appears in this collection. Drawing and music

came to be considered valuable features of the curriculum. By 1895, an increase in local school taxes was necessary and was approved at the polls. By 1900, the student body had outgrown its quarters and a new building, soon to be regarded as one of the most forward looking in the country, was erected: the First Ward School. On March 13, 1900, its cornerstone was laid before a crowd of 3000. At about that time Charlotte had 2700 pupils in its public schools, and 47 teachers. Today, in contrast, it has almost 30,000 pupils and approximately 1200 teachers.

Dr. Harry P. Harding followed Dr Graham in 1913, and after a long, successful administration was followed in 1949 by the present superintendent, Dr. Elmer H. Garinger. Dr. Harding organized the upper grades into a departmentalized high school; and in 1923 the entire system was transformed into a 6–3–3 organization. The junior high schools then introduced were the first in the state.

Locations and design of many of Charlotte's new schools have been strongly influenced by housing projects; cooperation between the schools and both private developers and public authorities is standard practice. Double Oaks Elementary, which won national recognition (cost including addition, over \$600,000 in 1951-52; A G. Odell & Assoc., Archts.), was erected on a part of a public housing site that was unusable for housing, between a public and private development



DOUBLE OAKS ELEMENTARY





LAKEVIEW ELEMENTARY



School population increased more rapidly than had been expected though larger enrollments had been foreseen and schools planned for expansion. Lakeview, started in 1950, enlarged 1951, cost (total) over \$300,000; Charles W. Connelly & Assoc., Archts.



Joseph W. Molitor

YORK ROAD JUNIOR HIGH



York Road Junior High, part of the 1952 program, cost over \$450,000 to build; Charles W. Connelly & Assoc., Archts. Its site, shared with Marie Davis (below), was acquired in unusual fashion

MARIE DAVIS ELEMENTARY



Expanded school site



Marie Davis Elementary, another of the 1950 plants that was added to in 1952, occupies a large site part of which was turned over to the housing authority when that agency needed land. Later the school board expanded the site to provide room for York Road Junior High (above). Note: unless otherwise stated, dates given are those of allocation of funds, not of actual construction; cost figures are for construction only, not including sites, equipment, and similar factors



The wisdom with which Charlotte's school administration has progressed under its present leadership has raised its educational system to an enviable position. At the close of World War II a substantial school building program was inevitable. Recognizing that this was likely to be a task beyond their experience, the school authorities retained a firm of educational consultants (then Engelhardt, Engelhardt & Leggett, now Engelhardt, Engelhardt, Leggett & Cornell) to survey needs, make recommendations, and assist in detail in carrying them through. The survey and recommendations went far beyond forecasts of pupil loads, site selections and similar major practical responsibilities; they included consultation on such fundamentals as the nature of the educational program itself, and the possibilities inherent in sound schoolcommunity relationships. In effect the entire city became a vast education laboratory in which theory was evolved, tested, refined, and after thorough investigation put into practice. No problems were ignored. Educational needs were thoroughly discussed with teachers and staffs, and on occasion superintendents and specialists from all over the nation were called in for group consultations. The accuracy of the 1950 survey's predictions thus fulfilled is near perfection: first priority called for 17 elementary schools to be built between 1950 and '55; all but four additions have been completed and of these two were provided in a different manner, two are



Chantilly Elementary, started 1946, enlarged 1952 (cost. \$445,000; M. R. Marsh, Archl.); original classrooms are placed sawtooth-fashion, a precedent not followed in later buildings. Like West Charlotte High (below) it has a larger site than had earlier been considered necessary.







Chantilly Elementary School, one of the early postwar plants, was

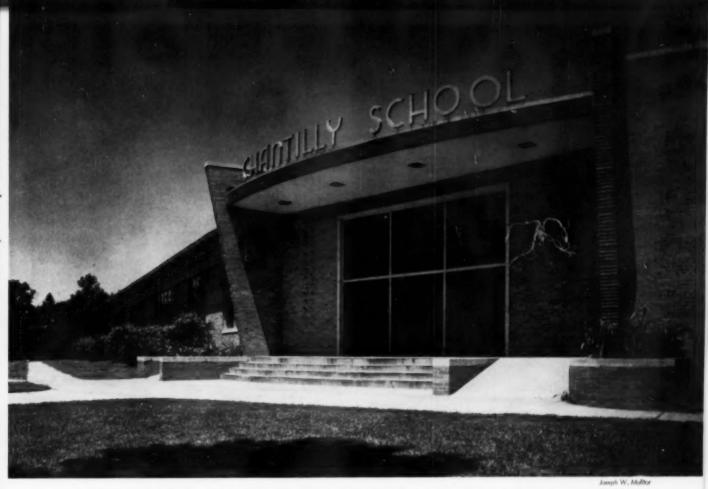
West Charlotte Senior High School, another winner of national recognition, is just within the present city limits in the center of a high-quality Negro suburb that is building up on both sides of the county line. A new superhighway bisecting the development and culting off access to school for many children led to cooperation with highway authorities to obtain a pedestrian overpass, and to relocation of a projected elementary school on the site











carefully programmed educationally and designed to remain, as it has, an effective part of the learning process









In Charlotte, construction of several excellent schools has led to development of high-class Negro suburbs—a rare phenomenon

now under consideration. All of four secondary plants or additions have been completed. Of lesser priority plants to be built 1955-60, three have been completed and several sites have been obtained.

The Charlotte school system - or any, for that matter - does not operate alone in its world. The city's school administration, it is evident, has cooperated extensively with the local housing authority, with benefits to both. The schools have at times followed, at times led private developers, always closely. There are the beginnings of similar close relations between highway authorities and the schools, between the Park and Recreation Commission and the schools. The large school sites recommended by the educational consultants, Engelhardt, Engelhardt, Leggett & Cornell - and almost uniformly acquired - make admirable beginnings for joint school and park development, a procedure which can be expected to increase. Provision of facilities of this kind, active acceptance of all these enlarging opportunities, is giving Charlotte good schools not only for all its children but also for all its citizens.

The spacious sile of Eastway Junior High, above, a 1952 project (\$524,000; J. N. Pease & Co., Archts.), is one of many of the size recommended by the consultants. Below, modern shop in the old Central High School (Biberstein, Bowles and Meacham, Architects)





Above, Northwest Junior High (Charles W. Connelly, Archt.) is one example of the encouragement of substantial Negro suburbs. Below, children's art displayed in Sedgefield Elementary (Walter W. Hook, Archt.). Right, band room, Eastway; elementary classrooms, Sedgefield and Merry Oaks (Paul Snyder, Archt.)







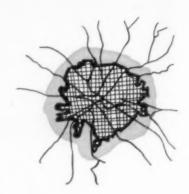


One postulate in the Charlotte school building program has been utilization of virtually all the city's architectural talent. Certain advantages have resulted, most of them foreseen. There has been no unethical practice, and yet stiff competition for jobs is the rule. This has meant that each architect is more than ever on his mettle when he works on one of Charlotte's schools, which of course means an increasingly high standard of architectural performance. It was also considered educationally essential that all buildings should fit their precise individual needs, and the repetitive details are few, the repetitive plan non-existent. A natural concomitant of the competitive architectural situation, this might be expected to produce over-expensive structures; in practice exactly the opposite has been true, chiefly because budgets were carefully estimated and seldom violated. One of the system's many visitors - hardly a week passes without its quota of sincerely interested professional inquiries from far and near — was Dr. A. J. Stoddard, Consultant to the Fund for the Advancement of Education. Dr. Stoddard was quoted in local newspapers as being thoroughly impressed with the advanced design of all the schools, with the economy of land purchase and building construction, with the high quality; in any other city, he declared, they would have cost half again as much.

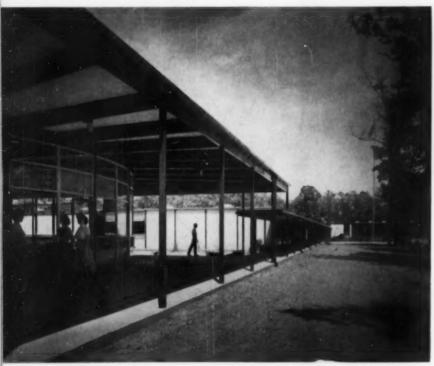
Among the city's architects schools are considered excellent commissions; while architectural fees are not high—indeed, one suspects that school jobs are often undertaken partly because they are civic duties and for the prestige they carry—rarely has a Charlotte architect actually lost money by doing one. No architect can be expected to get rich doing a superb custom job to a tight budget, and that is exactly what Charlotte requires.



Charles W. Connelly, Archt.



Architects: A. G. Odell & Assoc,





Most recent of Mecklenburg County's secondary schools is Wilson Junior High School, named in honor of the County Superinlendent, Jim Wilson. The school, winner of awards in two national competitions, will eventually house 1200 pupils. It is of light steel frame with shop-fabricated wall panels and extensive glass areas, campus-planned as a series of buildings around several courts.





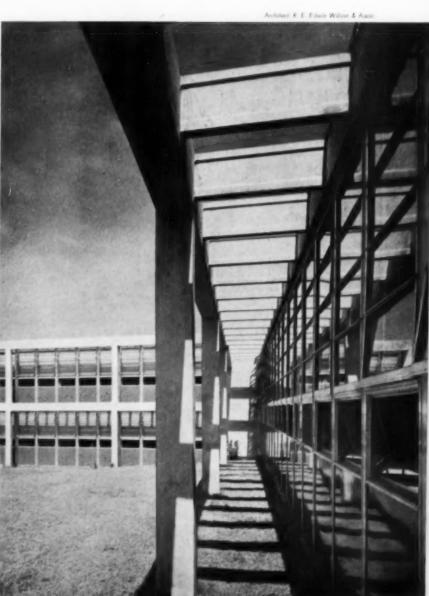


General A Tray econs choice Molitor

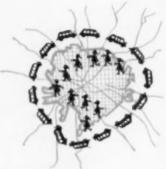
Mecklenburg County surrounds Charlotte. School bonds for both County and city derive from the County. As the city's population has densified and its territory expanded there have inevitably been delicate situations; in fact, there has been danger that areas immedialely outside city limits would become a sort of no-man's land. To avert this the two boards of education are now cooperating closely in a joint advance-planning program. Meanwhile the county has been solving its own building problems. Above, left to right, West Mecklenburg High: Hoskins Elementary; Paw Creek Elementary



One county problem has been consolidation of numerous small, inefficient school buildings into fewer, larger, better functioning plants. There were many obstacles—the pride of the several individual rural communities, a diversity of opinions and loyalties, a tight budget. The county administration's patience has overcome most of these. Above, right, the new McClintock Junior High



Charlotte and Mecklenburg County were named in honor of Queen Charlotte of Mecklenburg-Strelitz, wife of George III of England. Nevertheless the famous Mecklenburg Declaration considerably antedated the colonies' Declaration of Independence. Self reliance still characterizes the people of the area. It is a good thing, then, to know that these two determined entities, the city and the county, have chosen to cooperate to solve their mutual school problems. As the county becomes suburban and the city pushes out into the countryside the question of who pays for what becomes important. To work things out equitably both boards have retained again the consultants who up to now have worked with them separately, and the first report of a five-year, continuing, joint survey of needs has been completed. Projects proposed for construction over the next five years are: Senior high schools, 4 new, 9 additions; junior highs, 7 new, 7 additions; elementary schools, 14 new, 16 additions; and an administration center to be the headquarters of both boards. The estimated cost of these 58 projects is \$23 to \$25 million at present prices. If past performance is a criterion, the new buildings will contain many advances over the old; and it is to be remembered that Charlotte's schools are noted for sensible pioneering in their campus plans, their schools-within-schools, their general education laboratories, and their concern for the development of the individual pupil as well as for the way they have helped their city to grow.



The city board provides no transportation for its pupils, but all modes are in use (pholos, top to bottom: on foot, high school students' jalopies, lower-graders' bicycles, commercial bus lines). The county uses school buses driven by students



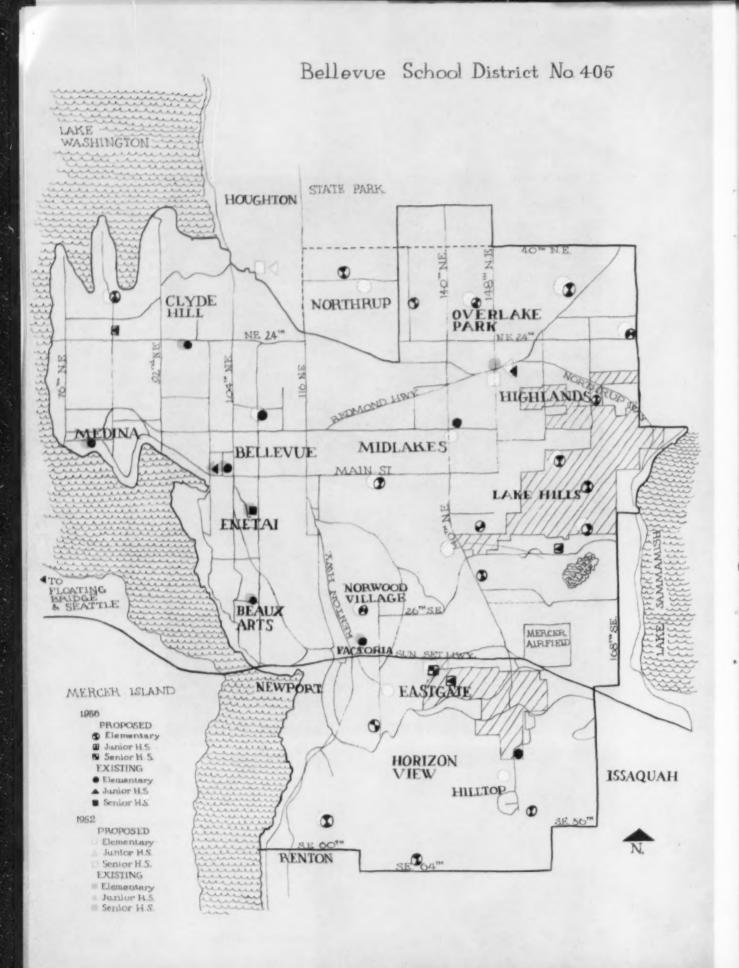




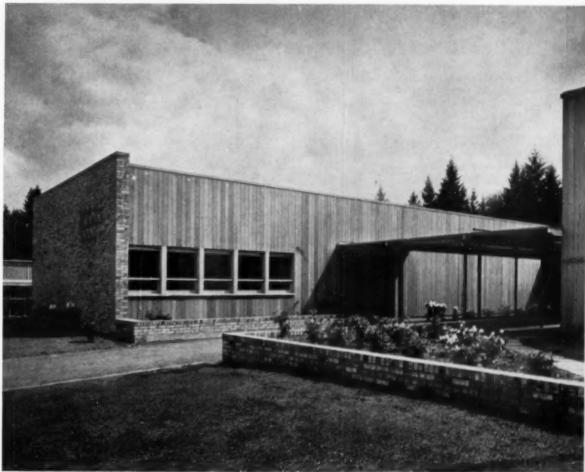




BELLEVUE, WASH., SCHOOL DISTRICT



THE INDIVIDUAL SCHOOL AND THE COMMUNITY: BELLEVUE, WASHINGTON



a high school district; however, soon the more articulate citizens of its several neighborhood communities realized it was a unit requiring an overall development plan if its school-building problems were to be met well at reasonable cost. One might expect an ideal result to come from such beginnings. but the citizens ran into circumstances which, for a time, they could not control. The school building program had to be adjusted to some of the very conditions the "plan" had been designed to avert. Now, however, the prospects are brighter.

Until 1940, Bellevue was a sleepy, rural, unincorporated community of

THE BELLEVUE, WASH., SCHOOL DIS-

TRICT did not exist in its present form

until mid-World War II except as

about 1000. Its business establishments were simple; its truck farmers grew berries and vegetables for the Seattle market. It had a few summer people, executives and professionals who owned scattered vacation places along Lake Washington's shore. It was a hilly pocket, partly cleared but much wooded. between Lake Sammamish on the east. Lake Washington on the west, and the established communities of Houghton and Renton north and south. In 1940 the floating bridge was built across Lake Washington and sleepy Bellevue found itself only a few minutes from downtown Seattle. That was the start of a residential development unparalleled in the Northwest.

Initially growth was slow; bridge tolls deterred many who might other-

Distribution of Bellevue District schools proposed in 1952, based on reasonable development and population growth, compared with actuality and revised forecasts of 1956 after uncontrolled development had over-exploited some neighborhoods at expense of others. Yet school-developer relations have been fairly good; several developers have given or reserved school sites. Dotted line indicates recent enlargement of school district

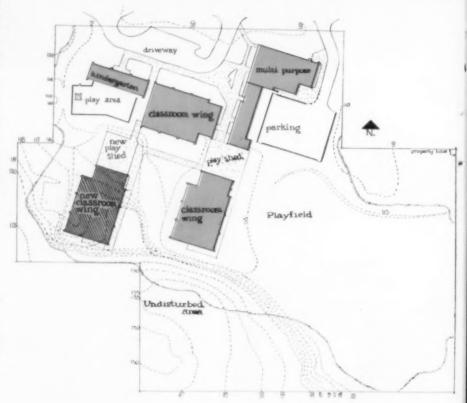
SCHOOL AND COMMUNITY: BELLEVUE, WASHINGTON

wise have moved to Bellevue. In 1946 tolls were eliminated, things began really to boom, by 1950 school housing was a very serious problem. In September 1951 the schools went to double shifts. Meanwhile the six separate elementary school districts in the area had consolidated with the one high school district, Union, to form what was first called Overlake (and is now Bellevue) School District. Consolidation took place in 1944; the present name was adopted in 1950, both upon local demand. This period also saw redevelopment of the local business district; substantial and still growing, this is now the hub of a prosperous shopping region and provides the business and professional services normal to such an area.

While the speculative land boom brought many problems - needs for doctors and lawyers, for streets and sewers and fire protection, for instance - it was most pressingly evident in the case of schools. Under the most fortunate kind of pressure, then, that applied by lay citizens who were their own constituents, the Board of Directors of the Bellevue School District employed Dr. Zeno B. Katterle, Dean of the School of Education at Washington State College, and Grant Venn, to develop a long-range plan which would encompass all these factors as well as regulate subdivision growth. More than 500 citizens actively participated in preparing the plan, whose essence was a reasonable and equitable distribution of potential population throughout the area, taking into account topography, highways and all the many other pertinent local factors, so that an eventual "saturation" population might enjoy what the area's natives had always had and newcomers had come for: a semirural surrounding rather than built-up suburbia. By 1952 this community labor, in which the technical staff of the King County Planning Commission

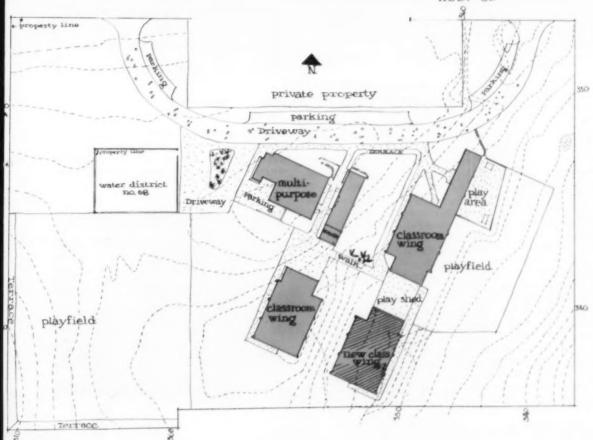


Dearbarn-Massa



Two elementary schools undertaken early in the current Bellevue program: on this page, Enatai; facing page, Clyde Hill. Narramore, Bain, Brady & Johanson, Architects, here initiated in cooperation with school authorities certain flexible standards (see text) which have been improved in subsequent buildings



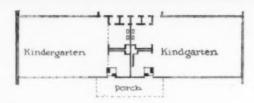




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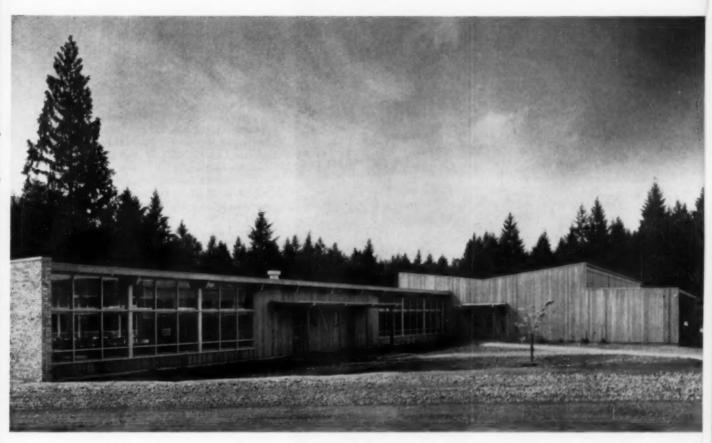
assisted, needed only ratification by the King County Board of Commissioners, who hold jurisdiction over unincorporated county communities.

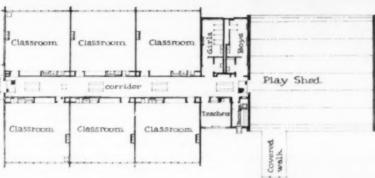
The charges of politics, exploitation and interest as causes of the long delay in ratification would require more competent investigation than an architectural publication can undertake if they are to be proved or disproved. The fact is that ratification by the County Commissioners was delayed until the summer of 1956, and without official ratification the proposed plan had no teeth. In desperation, a few of the district's neighborhoods incorporated themselves and enacted zoning ordinances of their own, some requiring startlingly large lot sizes. Most of the land has been open to uncontrolled subdivision, and in certain areas - few of them reasonable for the purpose population density is now so great that some planned school locations have been abandoned and others substituted



Standard units adapted to different needs: photo above, Enatai Elementary; below, kindergarten, Clyde Hill; opposite page, top, classroom unit with kindergarten element added, Clyde Hill; bo'tom, classroom, Enatai









and proposed school building expansion has been shifted and accelerated.

Regarding the nature of their schools, the Bellevue Board and administration (first under the able Supt. T. R. Thordarson and later under the equally competent Supt. George B. Brain) has been able to adhere to most of its earlier objectives, to progress toward others. Its difficulties are not chiefly financial although it must watch budgets carefully. At the time of its original planning report, desirable maximum size for elementary schools was set at 20 rooms (18 classrooms, 2 kindergartens); of junior highs, 600 to 800 pupils; senior highs, 800 to 1200 pupils. There existed in 1952 six elementary schools, one junior and one senior high. Two of these, Clyde Hill and Enatai Elementaries (illustrated herewith), have each been enlarged to the 20-room maximum. One elementary building has been incorporated in a new junior high now under construction and replaced with







SCHOOL AND COMMUNITY: BELLEVUE, WASHINGTON

a new adjoining elementary plant. Others have been built or are building, or are in planning stages. Until recently one architectural firm, Narramore, Bain, Brady & Johanson of Seattle, has been retained for all school work; now other firms are coming into the picture.

The six-room building unit shown in the plans of Clyde Hill and Enatai was adopted as a flexible standard that could be modified as need and experience might indicate, as an economically sized building element suited to the rugged terrain, the climate, the educational program and community needs. The early structures are steel frame and masonry, enjoying good fire ratings and low insurance costs; recently the insurance differential has been so cut that high construction cost is no longer justifiable and the new Phantom Lake Elementary is to be of frame. Other developing ideas include changes in the size of the basic unit from 6 to 4 to 2 rooms each; thin paraboloid roofs of plastic for the unwalled playsheds of schools now being designed; and in the new junior high, a thin-shell concrete roof, luminous ceilings and interior walls all glass above the 51/2 ft line. Where Clyde Hill had wood windows. newer schools have aluminum. In multipurpose rooms the stage has become less and less conventional.

Bellevue has other problems coming: a second floating bridge from Seattle will soon be reality - where will it enter Bellevue? The nature of the population is changing from mostly business and professional people to include others holding different viewpoints. Due to uncontrolled growth the unification of the District's people is more difficult to achieve. Incorporated Bellevue is growing; the school district is too. However, these are nothing compared to problems of the past which, though not perfectly solved, are in infinitely better shape than was thought possible a year ago. And action started in the schools.

Playsheds in Bellevue's elementary schools (top, Clyde Hill; center, Enatai) are large rooms without walls, serve well in the mild climate. Multipurpose rooms (bottom, Enatai) have been evolving to look less like gymnasiums in later schools



ARTICLE TWO IN A SERIES, "A CHANGE AHEAD FOR STRUCTURAL DESIGN"

ULTIMATE STRENGTH DESIGN OF CONCRETE

By Edward Cohen, Associate, Ammann & Whitney, Consulting Engineers, New York

AFTER FIFTY YEARS of progress in design, in construction and in the development of a true understanding of the structural mechanics of reinforced concrete, the basic American building code for concrete structures has undergone a fundamental revision. The American Concrete Institute Building Code Requirements of Reinforced Concrete (ACI 318-56) now states that "the ultimate strength method of design may be used for the design of reinforced concrete."

The basic innovations of the ultimate strength method of design consist of (1) using as design loads the actual working loads multiplied by the appropriate load factors or safety factors and (2) proportioning the sections for the resulting ultimate moments and thrusts by the use of a plastic stress distribution. Fundamentally this method affects only the design of column and beam sections for axial load, bending or bending plus axial load. The required strengths are determined from an elastic frame analysis for moments and thrusts and no allowance is made for redistribution of moments (limit design). Under the actual working loads the resulting structures will be primarily in the so-called "elastic range" and the stresses in the steel tension reinforcement will be only slightly higher than those which exist in most current designs for present commonly used grades of steel. However, allowance is made to utilize steels with higher yield points up to 60,000 psi.

Although some additional economy could be obtained, moment redistribution, or limit design, is unnecessary for the design of new structures of reinforced concrete because the reinforcement at each section can be readily proportioned in accordance with the variations of the elastic moment diagram. The use of limit design would involve the use of high stresses under working loads and unnecessary cracking. However, properly designed reinforced concrete has adequate ductility which may be utilized in analyzing existing structures for new overload conditions or in the design of structures for resistance to dynamic loads such as blast or earthquake. Ductility of reinforced concrete has been well demonstrated in the laboratory and in actual structures both under test and in normal use.

The present procedures for the design of reinforced concrete slabs make allowance for some redistribution of moments. In the Scandinavian countries full redistribution of moments has been used as the basic design method for slabs for several years. This method, the "yield line" method, is now gaining acceptance in the United States and laboratory studies are under way to refine its use and establish its limitations with respect to cracking and shear strength. Research is also being conducted on the application of plastic methods to the design of thin shells.

It is quite likely that a half century

ago engineers would have been as familiar with some of the general concepts discussed here as they are today. The design theories developed by the early pioneers Ritter 1899, Talbot 1904, Withey 1907, Mensch 1914, although limited in some respects, were based on good agreement with test results. Since then, starting with the first generally accepted code in 1910, design procedures for many years drifted into complete acceptance of the fictitious straight line or elastic stress distribution. However, many engineers were unsatisfied to proportion structures on the basis of methods with important limitations which could not be justified by tests. Starting with the papers by C. S. Whitney in 1937 and 1942 which presented a practical verified design procedure for ultimate strength design, new interest was rapidly developed in this concept.

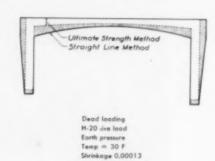
In 1944 a joint ASCE-ACI Committee on Ultimate Strength Design was formed under the chairmanship of the late A. J. Boase. In 1955 this committee with L. H. Corning as chairman completed its assignment "to evaluate and correlate theories and data bearing on ultimate strength design procedures with a view to establishing them as accepted practice," with publication of its final report.

The 11 years which elapsed between the formation of the committee and its final report have been used to conduct extensive tests and to evaluate carefully

ULTIMATE STRENGTH VS. STRAIGHT LINE METHOD

Skelch shows how size of a reinforced concrete highway bridge can be reduced through use of the ultimate strength theory

Figura 1



Skew angle 45°-36'

the various design methods and load factors. The results of this report have been incorporated in the 1956 ACI Building Code as an acceptable method of design. Previous to this, ultimate strength methods could only be used for the investigation of special structures and for designs either outside the jurisdiction of building codes or with special permission from the supervising authorities. Now, after fifty years of progress, we return to design methods based on the true strength of reinforced concrete sections.

Effects of Ultimate Strength Design Methods

Although present practice already includes many empirical corrections which compensate for some of the more flagrant deviations of the straight line or

elastic methods for the design of sections, the application of the new code will give the structural designer new confidence and freedom in proportioning structures. The acknowledgment of the actual strength of flexural members as governed by the compressive strength of the concrete will allow the use of shallower beams and minimize the weight of required compressive reinforcement where the design is governed by the strength requirements. For any given set of load conditions the new provisions will generally result also in smaller columns in rigid frame structures. Additional economies and easier construction will be possible by the use of high strength reinforcement. The revised code now allows the use of steel with a yield point of 60,000 psi, which is equivalent to a maximum working stress

of 33,300 psi as compared with the previously allowed maximum of 20,000 psi, a 65 per cent increase when proper precautions are taken to limit deflections and cracking.

Although it is difficult to define the actual economies in dollars and cents, it is safe to assume that because the designs will be of more uniform strength, savings will be effected by the elimination of excess material from sections where it is not actually needed. Any analysis of savings should consider the savings in formwork, possible reductions of overall story height where beam depths are reduced or haunches eliminated, and savings in foundations where the total weight of materials is reduced.

Structures where obvious major economies are possible are those in which important forces are developed by volumetric changes such as temperature, shrinkage, creep, etc. By reducing the size of members and thus reducing the rigidity of the structure, the stresses caused by the volumetric changes are minimized. Thus, not only are economies possible by using the minimum required material for a given set of moments and thrusts, but the design moments and thrusts are themselves reduced.

Actual comparative studies of fixed concrete arches and rigid frame highway bridges as designed by standard procedures and by ultimate strength methods have indicated that the latter designs result in structures of substantially more slender proportions. The use of such structures has been found to result in (1) economy of concrete in the superstructure and the footings, (2) little if any increases in the total weight of reinforcing steel, (3) a decrease in the centering required for erection and (4) in the case of the bridges, a reduction in earthwork quantities and wingwall heights. For structures founded on piles, the reduction of the total reactions due to the reduced dead load and volumetric effects would mean even greater

However, it is very important to note that the ultimate strength method will not always mean reductions. In some cases it may result in additional tensile reinforcing in order to provide a uniform factor of safety against overload rather than a given allowable stress under working load.

It should be noted that ultimate strength design is only a method of pro-

LOAD FACTORS

Effect of load factors and load combinations on the design of sections where the dead load effect is a concentric] compression and the live load effect is a moment

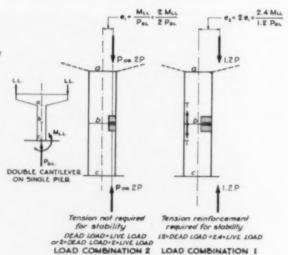


Figure 2

portioning sections based on their actual strength in direct stress, flexure, and combined flexure and direct stress as found by tests. When combined with load factors, it provides a method of obtaining a uniform factor of safety for flexure and thrust, if the field control is adequate to assure the required concrete strength in the structure.

Factors of Safety

The report of the Joint ASCE-ACI Committee on altimate strength states that members should be proportioned so that:

- "(1) They should be capable of carrying without failure the critical load combinations which will insure an ample factor of safety against an increase in live load beyond that assumed in design;
- " (2) The strains under working loads should not be so large as to cause excessive cracking."

In order to satisfy these conditions the following load factors are specified where the effects of wind and earthquake can be neglected.

Load Combination (1)

Design Load = 1.2 x Basic Load (Dead Load and Volume Change Effects) plus 2.4 x Live Load

Load Combination (2)

Design Load = K x Basic Load plus Live Load, where K = 1.8 for beams without axial load and 2.0 for columns and members with both bending and axial load.

Based on the above, the minimum factor of safety or load factor for working load (dead plus live) is 1.8. It also provides a factor of safety of almost 2½ against live load. An allowance is made for a 20 per cent increase in dead load above that shown on the construction plans.

Similar formulas have been established where wind and earthquake effects must be considered.

Two conditions are required for the design of reinforced concrete because it is a non-homogeneous material, of which one constituent, the concrete, has adequate compressive strength but so little tensile capacity that it is normally disregarded. The first criterion controls the design when the dead load produces an essentially axial force on the section and



PLASTICITY

A 22-ft clear span concrete
haunched beam with fixed ends
as it appeared following load test.
This member underwent
a 7-in, permament plastic deflection
without loss of strength
and with little damage

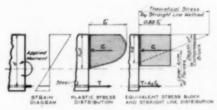
the live load effect has a large eccentricity. For such a case there may be no tensile stress nor requirement for tensile reinforcement under working load or any multiple of working load, but substantial tensile reinforcement may be required when the live load is increased disproportionately to the dead load.

For example, if a member subjected to dead load compression and live load flexure is designed for working loads on the basis of Load Combination (2) only or allowable stress, the factor of safety against an increase in live load may be far below the value assumed in selecting the allowable stress or the load factor because the dead load compression is fixed. The effect of increasing the live load moments without changing the dead load compression may be such as to move the resultant from inside the

section to some distance outside the section. If the member were originally designed for compression only, it might have little reserve for the tension stresses produced by the overload condition and failure would follow. The use of *Load* Combination (f) would prevent such failures.

The condition of dead load flexure plus live load tension would be similar.

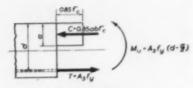
The load factors recommended for ultimate strength design provide that the maximum internal forces acting on each section of a reinforced concrete structure will bear a uniform ratio to the ultimate strength of that section. It follows that the factors of safety used for the design of the individual sections will be the minimum factors of safety against collapse of the total structure and will be the actual factors



EQUIVALENT STRESS BLOCK

Formulas for proportioning sections to resist moments and thrusts are based on an equivalent rectangular stress block which, for simplicity, replaces the curved, actual stress block

Figure 3



ULTIMATE MOMENT CAPACITY

This sketch shows the magnitude of forces and resisting moment in an under-reinforced concrete beam at the point at which the tension steel is strained beyond the yield point

Figure 4

fy - Yield point stress of steel reinforcement

- Width of beam

of safety against collapse only in those structures where moments cannot be redistributed under overload and where no self-relieving stresses are present such as simple beams or columns or rigid frames with single fixed positions of load and free of temperature and other stresses from volumetric changes.

For a rigid frame structure designed for pattern loading or moving loads, the collapse load will be higher than any of the given design loads multiplied by the load factors. This is so because with the present ultimate strength method the design moments and thrusts are computed from elastic frame analyses and generally only one or two sections of the structure are stressed fully by any one position of the design load. Therefore, as the load is increased these sections can yield without loss of strength,

and other sections not fully stressed will be brought to their full capacity. Only then, when plastic hinges are developed will failure take place. Although no allowance is made for such behavior by the ACI Code many tests have indicated that reinforced concrete structures have more than sufficient ductility to allow such redistribution under heavy overload. This characteristic has recently been verified by severe tests of structures subjected to blast pressures of atomic bombs.

An additional factor of safety against collapse due to overload is available in those structures where volumetric effects are present in the final design moments and thrusts. Because the basic design load includes volumetric effects which are self-relieving, that is, reduce and disappear as a result of yielding, and do not affect the overload capacity, the factor of safety against collapse is increased.

Strength Calculations

The final phase of ultimate strength design involves the proportioning of sections to resist the computed moments and thrusts. For practical purposes the formulas based on an equivalent rectangular stress block given in the ACI Code may be used. (See Fig. 3.)

It should be noted that the depth of the equivalent stress block is not the same as, k₂d, the actual distance to the neutral axis or kd, as computed by the straight line stress distribution method. The essential principles behind the rectangular stress block are that (1) the total compressive force is the same as that for the actual elastoplastic distribution and (2) the center of the equivalent rectangle is at the same location as the resultant of the actual stress distribution.

In other words the actual irregular stress block is replaced for simplicity with a rectangular stress block of equal total force and an average compressive intensity of 0.85f's' where f's is the crushing strength obtained from a standard test on a 6 x 12 inch plain concrete cylinder at an age of 28 days.

If the beam is under-reinforced so that primary failure will occur in the tensile steel, the concrete will crack as the steel is strained beyond yield and the equivalent depth of the beam in compression, "a", will decrease until the average effective concrete stress reaches the maximum of 0.85f'c. The resisting moment is given by the moment of the force in the tensile reinforcement about the centroid of the compression force. When the section is without compression steel:

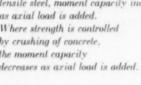
$$M_u = \Lambda_a f_y \left(d - \frac{a}{2} \right)$$

The moment, Mu, must be equal to the sum of the dead and live load moments times their load factors. If the area of tensile steel is increased to $0.456 \stackrel{f'c}{=}$ the moment capacity of the section will increase until failure occurs by crushing of the concrete at the same time that the stress in the reinforcing steel reaches yield point stress. Any further increases

in the area of tension steel will not produce appreciable increases in the moment capacity.

BENDING AND AXIAL LOAD

This is an interaction curve for strength of a reinforced concrete column with both bending moment and axial load. Where strength is controlled by yield of tensile steel, moment capacity increases as axial load is added. Where strength is controlled by crushing of concrete, the moment capacity decreases as axial load is added.



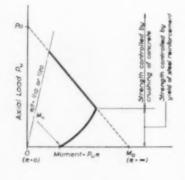


Figure 5

In order to eliminate the possibility of compression failures and maintain ductile sections the new ACI Code limits the maximum ratio of tensile steel for flexural members without compressive reinforcement to

$$\frac{A_a}{bd} = p = 0.40 \frac{f'_c}{f_x}$$
 (2)

which is slightly less than the true ratio for balanced reinforcement but is about twice that allowed by the straight line method. The ultimate moment corresponding to balanced design by the revised code is

$$M_u = 0.306 \text{ bd}^2 f'_o$$

For the case of a concentric axial load the ultimate capacity of a column is given by:

$$\begin{split} P_{\text{o}} &= .85 f'_{\text{o}} \left(A_{\text{g}} - A_{\text{st}} \right) + f_{\text{y}} A_{\text{st}}, \\ A_{\text{g}} &= \text{Gross cross-sectional area} \\ A_{\text{st}} &= \text{Total steel area} \end{split}$$

the direct combination of the strength of the concrete and the reinforcing steel. However, since it is difficult to ensure that the actual loadings will ever be entirely concentric it is required that a minimum eccentricity of $\frac{1}{20}$ the total diameter for round spiral columns and $\frac{1}{10}$ the total thickness of rectangular columns be considered in the design.

The equation for members under combined bending and axial load where the strength is controlled by the tensile reinforcement is derived in a similar manner. Where the compressive strength controls, tests indicate an essentially straight line between the case of pure bending and the case of axial load. It is interesting to note that the moment capacity of a reinforced concrete section increases as axial load is added if it is controlled by yield of the tension reinforcement. Of course, if it is controlled by crushing of the concrete, the effect of axial load is to reduce the moment capacity. This is shown in Fig. 5.

Ultimate strength design of reinforced concrete thus provides one basic method for the design of beams and columns with any amount of eccentricity, from zero to infinity whereas conventional design requires different approaches for axial load, small eccentricity and large eccentricity or pure bending. Adoption of ultimate strength methods will result therefore in considerable simplification of the work of proportioning sections. Design charts are

available for flexure of rectangular sections, and for flexure and axial load of rectangular sections, round sections and square sections with round cores. It may be noted that the design formulas contained in the Joint Committee Report and the ACI Code are essentially the same as those proposed by C. S. Whitney 16 years ago.

The ultimate strength method of design requires that the actual concrete strengths and the steel strengths be at least equal to those assumed by the designer. The design formulas provide no factor of safety to cover shortcomings in the materials. For this reason the Code requires use of controlled concrete with not more than one 28-day cylinder test in 10 having an average strength less than that assumed in the design. It is also specified that the average of any three consecutive tests shall not fall below the design value. For the design of the reinforcement the minimum value of the yield stress of the steel is to be used in design. Since the strength of most of the steel and concrete will be higher than the minimum values used for design, most sections will therefore be designed on the safe side; seldom will the factor of safety be less than that intended.

Deflection of Beams and Slabs

Because the ultimate strength method of design will encourage the use of more slender members with steel working at higher stresses, the possibility of increased flexibility makes a careful consideration of deflections more important than ever before. Undesirable deflections have occurred in many structures designed by the straight line method and are not due to the method of design nor. in some cases, to stress conditions caused by dead or live load. It should be noted that the final long time deflections of reinforced concrete members may be 2.5 to 4.0 times those computed by clastic methods based on stress-strain curves which are conventionally used. As a result, the necessity of keeping the deflections within acceptable limits will often determine practical dimensions. With slender compressive members such as arches, the longtime change in shape of the member axis as a result of creep may add substantially to the design moments. The effect of shrinkage on the deflection of thin slabs reinforced on only one face are well known and

are best illustrated by the warping which has been reported for precast channel slabs with substantial bottom reinforcement in the stems and light reinforcement in the thin flange slab. Lack of rigidity in formwork supports during the setting period during construction may contribute additional slab deflections, particularly in multi-story buildings.

One of the important ways in which sagging can be limited is by addition of compression steel. This is useful in reducing the effects of creep because the effectiveness of the steel is increased as the effective modulus of elasticity of the concrete is reduced. Compression steel also reduces the effects of shrinkage by bridging and reducing the cracks. Of course, it is well known that the use of good concrete with adequate curing is of prime importance for reducing the effects of shrinkage. Creep is also greatly reduced by postponing the time for removal of forms and supports. Flexural members of minimum depth with heavy reinforcement should be used only where the resulting deflections will not be objectionable. However, it should not be inferred that flexibility properly considered by the designer is objectionable.

Conclusion

The present approved ultimate strength method for reinforced concrete applies. primarily to the design of sections for combinations of moment and thrust. The ultimate strength method requires. that the structure be detailed to have sufficient shear (diagonal tension) and bond strength to fully develop its moment-thrust capacity. It is also assumed that the control of the concrete production, placing and curing will be adequate to provide the required concrete strength. While designing members for strength the engineer must be careful not to overlook other factors such as deflection, crack resistance, and durability which greatly affect the usefulness and appearance of a structure for its intended purpose.

In designs based on ultimate strength, the engineer can prevent wasting construction material and design time and is allowed more freedom in the selection of sections. With the ultimate strength method as another powerful tool, he can more readily provide a structure which will meet the requirements of architectural design.

MASONRY IS MEETING THE DEMANDS OF MODERN CONSTRUCTION



Metal and glass buildings have been getting under the skin of the masonry industry. What they propose to do about it by developing new materials and techniques was revealed at a Building Research Institute meeting in Washington last month. On the following three pages and pp. 266–267 are reported the major advances announced. Discussion of masonry brings to mind the problems of waterproofing; so features of the relative newcomer in this field, silicone water repellent, are examined on page 265

BRICK

Research on brick and tile is moving in several directions in an effort to cut construction costs: (1) lighter weight—as much as 40 per cent—which will reduce the dead weight in buildings as well as save on freight costs; (2) changes in unit size to simplify wall construction; and (3) automation in the packaging of brick and in laying brick on the job.

It might also be said that this industry's search is being conducted in another direction which, paradoxically, is not aimed at making brick and tile lighter, but capitalizing on its mass. Eight test hets have been constructed of various materials including brick, tile, steel panels and wood siding in order to determine what benefits such as reduced size of heating and air conditioning plants as well as fuel bills, can result from the capacity of clay products to soak up heat or cold. Lightweight Brick. By the end of the year, the Structural Clay Products Research Foundation, headed by Director Robert B. Taylor, hopes to be producing some 50,000 lightweight bricks in its pilot plant at Geneva, III. The brick is all clay, but is made light by mixing a lightweight aggregate, which consists of "exploded" clay particles, along with regular clay. This will make a 5 lb brick weigh 3 lb, an 8 lb brick, 5 lb.

Other advantages besides its light weight are: (1) greater uniformity of size; (2) can be cut more easily for precision grinding.

Prefabricated Brick Wall. Larger masonry units have become more popular recently—for example the SCR brick, introduced several years ago, which is 2½ is by 5½ by 11½ in. While originally developed for one-story houses as a single wythe wall, it has other potentialities including load-bearing walls for cellular, multi-story buildings up to 15 stories high. (See Architectural Record June 1952).

The trend to large panel sections has fostered a still different approach at the Research Foundation. A prefabricated brick wall section (see photo, far right) has been produced in sections of two bricks wide and 15 to 20 bricks high through the use of a fast-setting mortar—the panel can be poured and lifted the same day. For exterior use, the panels are $2\frac{1}{2}$ in thick and are reinforced to carry wind and structural loads.

One of the obvious ways to speed up laying a brick wall, according to the Research Foundation, is to provide scaffolding which keeps the mason's supply of brick and mortar at a convenient height and location behind him. Improvements in scaffolding techniques have demonstrated an increased productivity of between 20 and 25 per cent.

Packaged Brick. The matter of shipping and handling of bricks, while not affecting building design, does influence costs. So it's worth mentioning the development of a pilot-model machine at the Research Foundation which straps 20 bricks in a tight bundle. Packages are made up of three strapped bundles of 20 plus two spacer brick for handling by hand trucks or fork lifting equipment. The contractor can trim costs because of less breakage and less mess to be cleaned up after the building is finished.

Thermal Test Huts. Clarence B. Monk of the clay products research staff feels that clay masonry has a thermal property advantageous to the design and operation of heating and cooling systems which has not been exploited very much. The higher thermal capacity of clay units as compared with lightweight constructions, may make possible savings in initial cost, in fuel and in electricity. The reason for this is that the massonry can store heat from the sun in winter and cold from cool night air in the summer. It has been recognized for



Eight test huls, six of masonry, one of wood frame, and one with metal panels were built at the Structural Clay Products Research Foundation to determine the beneficial effects of thermal lag

a long time that the "U" factor does not give a complete picture of the thermal properties of a wall or roof. The "U" factor gives heat loss or gain accurately only for the condition when heat flow is steady. With massive, dense materials, there is quite a lag between the time when the sunlight falls on a surface and when its effect is felt inside. At the other extreme, heat gain through glass is practically immediate. This phenomenon has been the subject of a good many excellent theoretical papers, but little has been done to give the engineer practical design data to use in the design of heating and air conditioning systems.

The eight test huts at the Structural Clay Products Research Foundation are instrumented to give empirical data on the thermal properties of constructions having a wide range response to temperature change.

LIMESTONE

Long a symbol of solidity and durability, limestone has gone modern too, in the sense that factory assembled units are available for complete and partial wall sections.

One through-wall unit consists of a 3-in stone exterior, 2 in. of rigid insulation such as cellular glass and 3 in. of natural stone aggregate which serves as an interior and can be painted or plastered. The aggregate, made from natural stone waste, can be colored

at the time it is cast. For ease of handling the unit will be 5-in, high and 24-in, long, although it could be longer if necessary. This 8-in, thick unit has an average U factor of 0.12.

Another prefab unit is a window surround having a 1-in. smooth stone finish, 3 in. of insulating board core and a sprayed-on aggregate for the interior. The interior also could be painted or plastered.

Large-size curtain wall panels have been developed, according to J. T. Mc-Knight, Executive Director of the Indiana Limestone Institute, with a 2-in. limestone outer face applied by mechanical fasteners to 2 in. of rigid insulation. One of the test samples had two pieces of stone for a panel-8-ft long and 3-ft high, but panels can be fabricated in larger sizes. The stone is fastened to masonry back-up with strap anchors or through use of shelf angles and dowels.

Waterproofing. Natural stones ordinarily do not have any inherent staining qualities; however staining can occur when water gets behind the wall and carries soluble salts or alkali to the surface. This can be prevented now through use of a new waterproofing material which takes advantage of the limestone chemistry itself. It has passed laboratory tests and will be on the market soon for application on Indiana Limestone.

Coloring. For those who would like a



High strength mortar makes possible a prefabricated panel wall of brick, 15 to 20 high and two wide



MASONRY MEETING DEMANDS OF MODERN CONSTRUCTION

variety of color for limestone walls, a penetrating stain has been developed in a series of basic bues which is sprayed on Indiana Limestone.

MARBLE

Back around 1930, marble was used extensively for its utility — in corridor walls, for example — as well as for decoration. More recently decorative uses have been prominent. Now it looks as though both features will be put to work, if current developments, as announced by A. T. Howe of the Marble Institute of America, are any sign. In addition to the popular veneer panels, there are a number of lightweight curtain wall constructions, using slabs of marble as thin as ½ in.

Curtain Wall Panels. The increasing

demand for thin, pre-assembled units has sparked the marble industry's efforts to produce a completed packaged wall in three possible forms: (1) marble plus insulation; (2) marble plus insulation in a marble frame on the back; and (3) marble plus insulation plus interior marble, or other backing. The first type of unit would be delivered to the job with only fitting into frames to be done in the field. In the second type, 2-in, wide marble strips are fastened to the back of the exterior slab, forming a recess into which the insulation is placed. The frame gives better bearing and wider marble to marble joining, and protects the insulation. An easily installed curtain wall panel, an example of the third type, has been fabricated by inserting marble, insulation and

backing in a metal frame which provides for snap-in connection (see photos below). The entire assembly weighs less than 9 lb per sq ft.

Another curtain wall panel is shown below in which the thin marble slab, in this case ½-in. thick, is set in place from inside the building, followed up by 3 in. of rigid insulation and ¾ in. of plaster. An air space of ½ in. is left between marble and insulation, so that the total thickness is 5½ in.

Marble can be cut as thin as its structural strength will allow, while retaining color, pattern and durability. Future. Innovations to come include: (1) new finishes for exterior marble to enhance the natural markings, (2) new and improved methods of anchoring, and (3) better methods of shipment.





Prefabricated limestone: (1) a "thru-wall" unit with 3-in. limestone, 2-in. cellular glass, 3-in. waste stone; (2) window surround with 1-in. stone, 3-in. insulation and sprayed aggregate





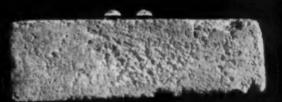
Marble curtain wall panel uses 1/2-in, marble slab backed up by insulation and composition board, all held by an aluminum frame which interlocks with other frames. It weighs 9 lb per sq 14





For another marble curtain wall, workmen first insert 3%-in. slab in spandrel framework, followed by 3-in. rigid insulation; interior has 34-in. coat of plaster

SILICONES WATERPROOF MASONRY



AS TECHNOLOGY HAS MADE possible improved basic masonry and new units, so has it brought about a new concept in waterproofing. Experience is growing in the use of silicone chemicals which literally repel water and have been tested as even keeping out wind-driven rain, if the wall has been properly constructed. As a result, applications are increasing both in number and variety for this treatment which has been developed to prevent damp interiors, spalling and cracking, and annoying efflorescence. Silicone treatment is effective in preventing penetration of moisture through pores of masonry and hairline cracks in above-grade masonry, but does not offer protection against hydrostatic pressure.

Before silicones were available, the conventional way to give masonry a protective coating was to cover the surface with waxes or metal stearates. This amounted to sealing or varnishing the structure with a continuous film. Such a treatment had several disadvantages, the three principal ones being: (1) discoloration of the treated surface; (2) subsequent damage caused by moisture entrapped in the masonry at the time of application; and (3) relatively short period of useful service. In contrast, the silicones cause no change in appearance; they allow the masonry wall to breathe; (water vapor can pass through); and they have a life of from five up to as much as 10 years, based on accelerated laboratory tests.

Various types of masonry have different degrees of porosity, but in any case when moisture penetrates it, here are some of the things that can happen:

When water creeps into the masonry pores in cold weather and freezes, it causes spalling and deterioration.

And in above-freezing weather, water

comes in through the pores to the inside of a structure, causing paint to peel, woodwork to crack and warp, plaster to stain and fall apart.

Water also carries dirt into the pores where it lodges and defaces the outside walls, often in streaks.

If the masonry wall, the mortar joints, or the back-up contain soluble salts, and the water gets in, efflorescence with its tell-tale white or yellow blotches is likely to occur. Assuming that workmanship has been good on a wall, silicones can prevent efflorescence by coating the masonry pores and even hairline cracks with a water-repellent film.

Silicones are not a cure-all, nor can they be a cover-up for poor workmanship or detailing. In fact, authoritative sources, including national laboratories and formulators, stress the necessity of good construction when appreciable amounts of soluble salts are present in brick, and the exterior is coated with silicones. If moisture gets behind the masonry (through cracks caused by poor flashing, for example) and then later starts to move to the outside, the soluble salts will move as far as the silicone layer and will be deposited there, since silicones stop the passage of liquid water. This precipitate might result in slabbing of the brick.

Silicones can be used on all types of masonry including: brick, regular and lightweight concrete block, stucco, cement-asbestos siding, unglazed tile, cut and artificial stone, sandstone, some limestone (Indiana Limestone is an exception), and mortar joints.

Methods of Application. Spraying with a low pressure spray gives excellent results. Brushing with a good wall paint brush also does a good job. The surface actually should be flooded with liquid.

Silicones work in this fashion: The

solution penetrates the pores of the masonry. When the solvent evaporates, a film is deposited on the surface of the pores to a depth of from $\frac{1}{16}$ to $\frac{3}{16}$ in., depending on the material. A chemical reaction then takes place, resulting in a highly water repellent surface.

On new construction, application should be deferred for at least 30 days in summer and 60 days if the temperature has been close to freezing. On older buildings any loose mortar or stone fragments should be removed and all large cracks or holes pointed. Best results will be achieved if the wall is thoroughly dry before application. Temperature is of little importance, since silicone can be applied at temperatures as low as 15 F.

Only one application is needed except for the following materials: Tile mortar joints, cement asbestos board, concrete floors, marble and some cast concrete.

Silicone treated surfaces are paintable, too. If the wall is to be oil painted the silicone should dry for three or four days. If it is to be coated with a water-mixed cement paint, the silicone should be applied after the surface has been painted and is dry. With porous concrete products (pore size greater than ½2 in.) such as lightweight aggregate blocks, the surface should be given an initial coat of water-mixed cement paint or a plaster coat of cement, sand and lime.

Two coats of silicone treatment are said to protect concrete floors from dilute acids and alkalis, providing traffic is light.

On the average, the following coverages are possible with one gallon of silicone water repellent:

Hand fired brick — 150 to 200 sq ft Soft brick — 100 to 125 sq ft Lightweight block — 70 to 75 sq ft.

better countries Heisen Carbide and Carbon Conscioning



Silicones are applied on large areas by means of a low pressure spray in a flooding action so as to insure thorough treatment

CERAMIC BONDED TO CONCRETE FOR SPANDRELS

The first curtain wall panels made with a ceramic veneer facing and

lightweight concrete back-up are installed in an Arcadia, Calif. hospital

Blue-gray ceramic-veneered concrete wall panels which were cast in advance, then delivered to the site and attached in place by bolted connections, form the complete walls of the four-story Methodist Hospital in Arcadia, Calif. (Neptune & Thomas, Architects, Pasadena). Developed by the Architectural Terra Cotta Institute, the panels are only 3 in. thick and relatively light in weight, yet have good strength and thermal properties, weathertightness, flexibility, an easily maintained colored surface — and the obvious merit of reduced time and labor costs at the

site because of the elimination of a backup wall.

The CV (Ceramic Veneer) Panelwall (supplied for this job by Gladding, McBean & Co. of Los Angeles) is formed by placing in a form 1-in.-thick ceramic veneer (architectural terra cotta) facing units with a high-fired glazed finish and then casting a reinforced concrete backup 2 in. thick. The backup is a lightweight, expanded shale type agregate, reinforced with galvanized welded steel mesh, which is vibrated in place for maximum density and good bond. The ceramic veneer is glazed,

fired (at 2200 F) and sized before it is placed in the casting mold. Here are some of the characteristics of the wall: Weight: About 30 psf.

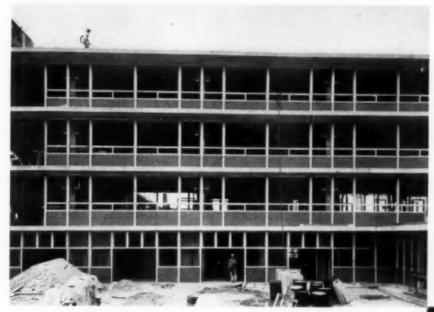
Weathertightness: The coefficient of expansion and contraction of the ceramic veneer and the concrete backing is about the same, and considerably less than metal, so there is a minimum of movement and therefore a watertight panel. A Koroseal gasket is used around the perimeter of the panel as a water seal. There is no through-the-wall joint in the panel itself, and so no other flashing is required.

(1) After being lifted into place by means of standard rigging equipment, the panels were stripped with Koroseal gaskets at the ends and placed in a cement mortar bed. (2) Panels were attached to the backs of aluminum multions by toggle bolts placed through holes in projecting strap anchors (which had been welded to reinforcing mesh and embedded in the concrete backing). (3)









Rendering of Methodist Hospital and view of the ceramic-veneered panels in place during construction

Thermal Characteristics: The U factor of the panel is between .5 and .6. However, with 1 in. of Zonilite plaster added to the back of the spandrel walf and covering the metal mullions, a U factor of about .27 was attained. Fire Bating: The panel itself qualifies for a 1-hr fire rating.

The technique of installation of the panels is illustrated in the accompanying photographs. The Structural Clay Products Research Foundation is currently engaged in a research program to improve even further the panel construction and to assist in developing thinner and lighter panels.



After fiber gaskets (for insulation between steel and aluminum) and metal shims had been inserted for accurate adjustment, the bolts were tightened, and steel eye bolts used for tifting were unscrewed. (4) Joint at concrete deck was caulked to ½ in. depth. (5) Base of multion was sealed from rear by caulking. (6) Membrane strip covered back of multions before application of interior plaster









BRONZE CURTAIN WALL WITHSTANDS MINIATURE HURRICANE

The New House of Seagram on New York's Park Avenue has withstood a hurricane—at least in miniature! A two-story mock-up of the building, which will be the first ever to be sheathed in bronze, was subjected to an intensive weathering test to determine the water-tightness and durability of its window and curtain wall construction.

The components of the test are shown in the photograph below right: the twostory curtain wall and window replica, a propeller and overhead water pipes. The tri-blade propeller, driven by an airplane engine, provided wind velocities ranging from 50 to 120 mph, creating all conditions of nature's pressures against the skyscraper walls. Water falling from the overhead pipes at the rate of 4 in. per hr was driven against the wall by the wind, but failed, according to the test results, to dampen or damage the interior of the mock-up. For the higher wind pressures water was applied also from distribution rings aft of the airplane engine to assure torrential conditions at the faces of all windows.

The series of tests was staged at the

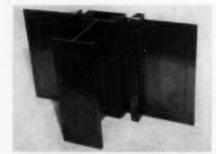
proving grounds of General Bronze Corp., which is fabricating the panels, and was designed to provide static and dynamic conditions of air pressure to permit measurement of unit infiltration of air and water from driving rains. The tests were observed by Mies van der Rohe and Phillip Johnson, the building's architects, among others.

The 38-story skyscraper, which is scheduled for completion late in 1957. will feature the first complete façade to be done in bronze. Architectural bronze was selected because of its nonrusting properties, its high resistance to corrosion, its workability and its permanency. After the bronze has been fabricated in the shop, it will be given a satin finish. Accelerated acid oxidation under ideal conditions will provide a good basis for the natural permanent patina. As it weathers, the bronze will take on a chocolate brown color and will require only periodic wiping to remove city dust and grit. Fixed windows (the building will be completely air-conditioned and so will need no operating windows) will be tinted pinkish gray to blend with the bronze as it ages and

also to eliminate glare.

The extruded bronze mullions, shown in the assembly below left, are shaped like lightweight steel columns and span from floor to floor to support the window and spandrel panel units. The I beams will also serve as guides for the mobile window equipment, which will travel vertically while maintaining the building façade. The mullions will be attached to the building structure by specially designed steel anchors which will permit perfect alignment in three directions. The window and spandrel units, 4 ft 7 in. wide and one story high, will be attached to the mullions in such a way as to allow for expansion and contraction within each unit, so there will be no accumulation of expansion or contraction over the entire façade. Window and spandrel frames will have completely welded corners with continuous gasketing material between them and the supporting mullions. Continuous copper flashing will protect the wall from condensation or other moisture at the window head level on each floor.

(More Roundup on page 280)



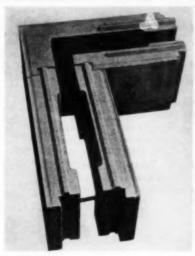
Positioning of exterior vertical I beams, spandrels and T bars at wall line



Propeller drives water from overhead pipes against building mock-up

PRODUCT REPORTS

Material * Equipment * Furnishings * Services





UNIQUE CONCRETE BLOCK FOR CAVITY WALL CONSTRUCTION

Presto Block is a unique concrete building unit which is said to produce a true air-cavity wall with speed and economy. Each block is a miniature "twin-wall" in itself, comprised of two separate concrete units bound together by corrugated steel ties which are inserted into the units automatically by machine during the production cycle. The top, bottom and end surfaces are keyed to lock upon erection, as can be seen in the close-up photograph above, thus permitting a wall to be laid so that at no point do the inner and outer walls have a through masonry bond. After the wall is erected, the keyed joints are pointed by hand or with a mortar gun to provide extra strength and a permanent moisture seal.

The "twin-wall" design simplifies the installation of electrical wiring and plumbing. No furring is needed, since the nature of the double wall construction creates a through air space. No additional reinforcement is required because of the multiple strength of the steel ties which bind the individual units together. Mortar tubs and heavy construction scaffolding are eliminated.

The cavity wall construction makes a building cooler in summer and warmer in winter and combines also sound and moisture insulation qualities, The Presto Block Machine Corp., Empire State Building, New York, N. Y.

DUAL-FACE FIREPLACE



Heatform Model. D is a fireplace unit serving two rooms, in which air chambers capture and circulate a large volume of the heat instead of losing it to the chimney. The unit has air heating chambers above and below the firebox, with connecting heating chambers leading from the lower to the upper heating chambers. It is shipped with a square end steel bar fuel grate made of 3A -in. bars for wood burning only. Superior Fireplace Co., 1708 East 15th St., Los Angeles 21.

ELECTRIC HEATING FROM CEILING

Electric radiant heating which employs specially insulated heating wires hidden in the ceiling not only does away with the chimney, furnace, radiators, flues and pipes, according to GE engineers, but also frees the space that would be taken up by conventional fuel burners and storage tanks and adds to the flexibility of decorative planning. The entire heating plant consists of the heating wires, thermostats and connections to the electric power supply.

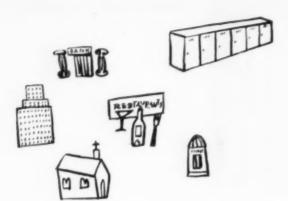
The wires are installed as shown in the illustrations below. First they are looped across the ceiling and stapled to it. Then they are covered with plaster or wallboard. The system heats by radiation, thus virtually eliminating drafts and air currents. According to GE engineers, the warmth is distributed evenly from ceiling to floor, with a variance of 4 deg or





(More Products on page 289)

less. Thermostats in each room permit separate selection of the temperature desired for that room. The wires can also be installed in concrete floors. General Electric Co., Wiring Devices Dept., 95 Hathaway St., Providence 7, R. I.



DESIGN BY MCPHILBEN (AIA 31-F-2)

Folio 56-6 presents engineering information for accomplishing successful interior lighting equipment applications. It offers a guide to levels of illumination in building types such as those shown in the sketches at left (taken from the brochure). It includes also sections on illumination calculations, lamp data, light distribution classifications and maximum spacing ratios, room indexes and tables of coefficients of utilization. 8 pp. McPhilben Mfg. Co., Inc., 1329 Willoughby Ave., Brooklyn 37, N. Y *

Religious Buildings (AIA 4-K)

Shows examples of how precast concrete slabs lend themselves to church buildings. 6 pp. Flexicore Co., Inc., 1932 E. Monument Ave., Dayton 1, Ohio.*

Home Insulation

Form WHN-11 describes home insulation with reflective facing and shows suggested methods of application. 4 pp. L. O. F. Glass Fibers Co., 1810 Madison Are., Toledo 1, Ohio.*

Enameled Aluminum Siding

Two brochures describe Koralum interlocking enameled aluminum clapboard siding and Lyfalum nailable enameled aluminum clapboard siding. Lyf-alum, Inc., Oconomowoc, Wis.

Office Lighting

I.E.S. Recommended Practice for Office Lighting includes results of consultation over the past six years with representatives of the I.E.S. Committee on School Lighting, the A.I.A. and the National Council for Schoolhouse Construction. 32 pp. 50¢. Publications Office, Illuminating Engineering Society, 1860 Broadway, New York 23, N. Y.

Hi-Lo Fully Automatic Dockboards

(AIA 35-I-131) Bulletin D-160 explains and diagrams the Hi-Lo features for both the recess and package model automatic dockboards. 4 pp. The Kelley Co., Inc., 316 East Silver Spring Drive, Milwaukee 17, Wis.

Sectional Cafeteria Counters

Catalog shows various component parts of a sectional cafeteria counter and how they can be assembled in many different combinations to fit individual needs and requirements. 16 pp. Southern Equipment Co., 4550 Gustine Ave., St. Louis 16, Mo

Physical Fitness Equipment

Catalog shows playground units of a new design embodying formed and welded sections instead of the standard friction joint assemblies. Pioneer Wagon Works, Owosso, Mich.

Sinks and Lavatories

Bound catalog presents diagrams with dimensions for each sink and lavatory fixture and also includes a price list section. U. S. Porcelain Enamel Co., 4635 East 52nd Dr., Los Angeles.

Tygon Protective Coatings

Bulletin 760 offers useful painting data in the form of charts, tables, diagrams and illustrations. The U. S. Stoneware Co., Plastics and Synthetics Div., Akron 9, Ohio.

High Fidelity Sound Reinforcement

Bulletin covers Sonassist, a hi-fi sound reinforcement system, available in console and table models, designed for meeting rooms in schools, hotels and churches. 4 pp. Associated Consultants & Engineers, Inc., P. O. Box 7509, University Station, Austin, Tex.

Progress Catalog 103

Describes a complete and expanded line of lighting fixture products, ventilating fans, range hoods and door chimes. 72 pp. Progress Mfg. Co., Castor Are. and Tulip St., Philadelphia 34, Pa.

Storage Water Heaters

Catalog 19, tab-indexed for easy reference, presents all standard lines of Patterson-Kelley commercial and industrial storage water heaters and includes the latest provisions of the 1952 ASME Code for unfired pressure vessels. 48 pp. The Patterson-Kelley Co., Inc., Storage Water Heater Div., 501 Fullon St., East Stroudsburg, Pa.*

Controlling Moisture

Design Techniques for Controlling Moisture in Building Structures is a manual prepared by a firm of technical engineering writers for W. R. Meadows Inc., 7 Kimball St., Elgin, Ill.*

Sliding Glass Doors, Windows

Brochure presents photos applicable to new construction, a nomenclature of stock door sizes and a complete list of manufacturing members and associate members of the Sliding Glass Door and Window Institute, 7421 Beverly Blvd., Los Angeles 36, Calif.

Gilsulate

Describes Gilsulale insulation for hot underground pipes, with on-the-job photos and technical data. 4 pp. American Gilsonile Co., 134 West Broadway, Salt Lake City 1, Utah.

Mississippi Glass (AIA 26a-3, 5, 6)

. . . for Residential and Commercial Use. Catalog 56-R describes, with full-size and half-size photos, figured glass and glass types for non-structural and for structural decoration. 12 pp. Mississippi Glass Co., 88 Angelica St., St. Louis 7, Mo.*

Lighting Catalog

Shows "dramatic, distinctive and decorative" residential lighting fixtures. 16 pp. Esly Mfg. Co., 112 So. Sangamon, Chicago 7, Ill.

Locksets and Accessories

Four-color catalog describes the "400" line of locksets and accessories in the Bel Air and Standard designs. 8 pp. Kwikset Sales & Service Co., Anaheim, Calif.

*Other product information in Sweet's Architectural File, 1956.

(More Literature on page 366)



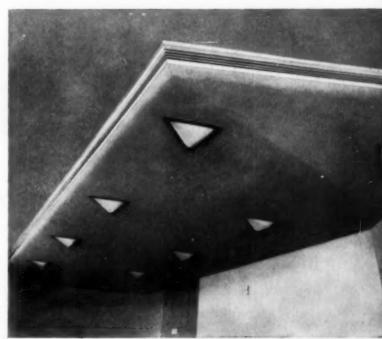


Price Tower:
Bartlesville, Okla.
Architect:
Frank Lloyd Wright
Engineer:
Mendel Glickman
Consulting Engineers:
Collins & Gould
General Contractor:
Culwell Construction Co.

High velocity air diffusion in the Price Tower

The photograph at the right shows how Mr. Frank Lloyd Wright incorporated Anemostat Straight Line All-Air High Velocity Units in the ceiling design of the Price Tower at Bartlesville, Oklahoma. The conditioned air is supplied through continuous Straight Line Diffusers located on two sides of the suspended ceiling. The diffusers do not only have vital functional use, but also add to the esthetic appearance of the architect's design.

The Anemostat All-Air High Velocity distribution system also offers important advantages. It can be used with smaller than conventional ducts. It can be installed in less time and at less cost. It requires no coils, thus eliminates leakage, clogging and odors. Furthermore, Anemostat round, square and straight line diffusers with high velocity units are adaptable to a wide variety of architectural designs.



PHOTOS: JOE O. PRICE



See how Anemostat Straight Line All-Air High Velocity units are used in a typical office area.



Write for "High Velocity Air Conditioning: Its Effect on Building Design" to Anemostat Corporation of America, 10 E. 39 Street, New York 16, N. Y.

Anemostat-The Pioneer of All-Air High Velocity Systems

hen bridge designs can be simplified...

ave better appearance... require less maintenance...

et cost less to build...

WHY

don't you design all bridges and buildings for welding

IN ARKANSAS

Plate girder bridge over the Spring River, Highway 62, at Hardy, Arkansas; 1078'-2" length with a 26 foot roadway.



IN TEXAS

Three level separation of State
Highway 225
and 156 in Harris County, Texas. Completed in
1953. 145 tons of
steel. Both structures are on
curves and both
are skewed.

Cost reductions of 15% to 20% realized in welded bridge design ...with substantial savings in steel

THE accelerated trend to the use of welded steel design for highway bridges is evident from surveys of highway departments across the nation.

Savings in steel as well as cost of fabrication and erection are proving to average 15% to 20% over riveted designs.

Examples shown are typical of welded bridges reported in Texas, California, Kansas, Connecticut, Ohio, Florida, New York, Iowa, Arkansas, South Dakota and numerous other states.

"Studies in Structural Arc Welding" helpful to bridge designers are available by writing . . .



THE LINCOLN ELECTRIC COMPANY

Dept. 2607 · Cleveland 17, Ohio

The World's Largest Manufacturer of Arc Welding Equipment

FINE HARDWOODS FOR ARCHITECTURAL USES-10

By Burdett Green, Executive Vice President, Fine Hardwoods Association and James Arkin, A.I.A., Consultant, Architectural Wookwork Institute

LACEWOOD (Cardwellia sublimis)—Australian Silky Oak, Queensland Silky Oak, Selano, Silky Oak.

Source: Queensland, Australia

Caler: Light pink with silvery sheen

Pattern: Small flaky grain due to large rays

Characteristics: Very attractive over-all pattern when used on small areas

Uses: Often as borders and limited, highly figured areas of fine furniture

Availability: Veneer (quartered) scarce

Price Range: Costly

LAUREL, EAST INDIAN (Terminalia tomentosa)—East Indian Walnut This species is closely related to Ireme Inote botanical name). However, the Laurel principally imported into this country is a very important wood growing throughout India and Burma. It varies widely in color from a yellowish-brown through all stages to a rich, warm brown with dark streaks, handsomely marked, and many types of figure. Another type of Laurel produced in the United States, which is an entirely different species known as California Laurel or Oregon Myrtle, is usually produced in burl or clustered figure. This should not be confused with the Laurel from the Far East (Terminalia).

Source: India and Burma

Color: Gray or brown with black lines

Pattern: Striped; occasional block-mottle or fiddleback figure; indistinct rays

Characteristics: Coarse-grained; hard and brittle; pores not numerous

Uses: Fine cabinetry

Availability: Veneer (quartered) scarce. Lumber scarce

Price Range: Costly

LIMBA (Terminalia superba) — "Korina," Afara, Frake, Offram

Another Terminalia which has been widely publicized under the trade-name of "Korina," In recent years this species has become one of the most popular naturally bland woods brought into this country. It has an especial appeal for architectural use in view of the fact that it is available in large sizes, as is Mahogany, and as both veneers followoodl and lumber.

Source: West Africa

Color: Pale vellow to light brown

Pattern: Rays fine and irregular; pores scarce, but large enough to give an interesting grain character

Characteristics: Medium texture and hardness; a naturally bland wood of good working properties

Uses: Architectural paneling and woodwork; contemporary furni-

Availability: Veneer (quartered, sliced) plentiful. Lumber available Price Range: Medium

MYRTLE (Umbellularia californica)—Acacia Burl, Baytree, California Laurel, Oregon Myrtle, Pepperwaod (at times called Acacia but no relation)

Source: West Coast of United States, especially Southern Oregon and Northern California

Color: Golden-brown and yellowish-green. Wide range from light to dark

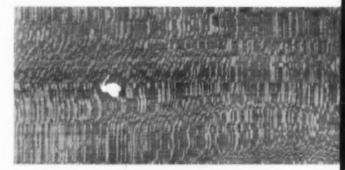
Pattern: Mixture of plain wood, mottle, cluster, blistered, stump and burl figure with a scattering of dark purple blotches

Characteristics: Hard, strong pores the size and distribution of Walnut; a magnificent, highly figured veneer

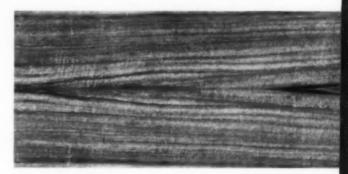
Uses: Decorative panels for architectural interiors, store fixtures and furniture; novelties; many fine turnings, trays and carvings

Availability: Veneers (half-round), lengths usually under 5 ft although up to 8 ft, rare to scarce. Lumber scarce

Price Range: Costly



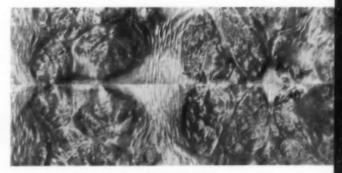
Lacewood, quartered (one piece)



Laurel, East Indian, quartered (2 pieces, book-matched)



Limba ("Korina"), quartered (one piece)



Myrtle Cluster, rotary (2 pieces, book-matched)



Beardsley Terrace Housing, Bridgeport, Conn. • Engineers: Frederick M. Hill and Paul D. Harrigan, New Haven.

Architects: Lindsay & Johnson, Bridgeport. • Heating Contractor: Bridgeport Pipe & Engineering Co., Bridgeport. • General Contractor: E & F Construction Co., Bridgeport.

Here's why Mechanical Engineer is

enthusiastic about Sarcotherm in 1200-family 16-building project

As Mechanical Engineer Paul D. Harrigan writes, "Sarcotherm steam heating controls in Beardsley Terrace Housing...working perfectly through extreme part of Winter as well as in Spring...sensitive, accurate and flexible...the Housing Authority, the architects and we ourselves are entirely satisfied."

Sixteen Sarcotherm Weather-Compensated Controls serve Beardsley Terrace. Of the continuous, modulated flow design, they provide individual zone control for the steam heating of each building. Precisely engineered orifice plates assure the proper steam flow to each heating unit.

COMPLETE SYSTEM - UNDIVIDED RESPONSIBILITY

Sarcotherm engineers cooperate in the preparation of working drawings and wiring diagrams for each job, and follow through with on-the-job help and supervision of installation. Sarcotherm assumes undivided responsibility because the Sarcotherm System is COMPLETE—includes zone controls, panels, thermostats and steam specialties—traps, valves, and air eliminators.

Write for further details. Sarcotherm Controls, Inc., Empire State Building, New York 1, N. Y.

FEATURES OF SARCOTHERM CONTROL SYSTEMS

- Easy to install working drawings and wiring diagrams furnished for each job.
- Easy to maintain because of simplified construction, fewer parts.
- 3. Easy to adjust to any desired setting.
- Engineered orificing—assures even heat flow to all units from the start.
- Undivided responsibility—by one maker, Sarcotherm, for the complete control system.

4003-

Sarcotherm

An affiliate of SARCO COMPANY, INC.

WEATHER-COMPENSATED CONTROLS FOR STEAM, HOT WATER AND RADIANT HEATING

FINE HARDWOODS FOR ARCHITECTURAL USES-11

By Burdett Green, Executive Vice President, Fine Hardwoods Association and James Arkin, A.I.A., Consultant, Architectural Woodwork Institute

OAK, ENGLISH BROWN (Quercus robur, L. Q., Quercus sessiliflora, Salisb.)—European Oak, Pollard Oak

Source: England

Celer: Light tan to deep brown

Pattern: Black spots, sometimes creating an effect much like tortoise shell

Characteristics: Noticeable figure and grain character; especially
pronounced flakes due to the medullary rays showing on the
quartered surface

Uses: Architectural woodwork; some fine furniture

Availability: Veneer (quartered, sliced) scarce. Lumber scarce

Price Range: Costly

PALDAO (Dracontomelum dao) - Dao

Source: Philippines, Indo-China and East Indies

Color: Gray to reddish brown

Pattern: Varied grain effects usually with irregular stripes, some occasionally very dark; occasional crotch or swirl

Characteristics: Pores are large, partially plugged; fairly hard, an exotic appearing wood

Uses: Architectural woodwork and furniture

Availability: Veneer (quartered, half-round) plentiful. Lumber available

Price Range: Medium

PRIMA VERA (Cybistax Donnell-smithii)—Durango, Palo Blanco, San Juan (sometimes misnamed "White Mahogany")

Source: From Central Mexico, south through Guatemala and Honduras into Salvador (other species of Tabebuia found in northern South America)

Color: Yellow-white to yellow-brown

Pattern: Straight grain. Although often plain, it usually shows large mottle or diagonal block figure

Cheracteristics: Odorless and tasteless; medium to coarse textured; straight to somewhat striped grained; moderately light in weight Uses: A fine, general-use cabinetwood

Availability: Veneer (quartered, sliced) scarce. Lumber available

Price Range: Costly

SATINWOOD

There are several somewhat similar woods imported under this name. The two most important are:

SATINWOOD, CEYLON (Chloroxylon swietenia, D.C.)—East Indian Satinwood

Source: Ceylon and southern India

Celer: Pale gold

Pattern: Ripples, straight stripes; bee's wing mottled

Characteristics: Hard, dense, interlocking grain; inclined to check

Uses: Furniture

Availability: Veneer (quartered, sliced, half-round) rare. Lumber rare

Price Range: Costly

SATINWOOD, WEST INDIAN (Zanthoxylum flavum, Vahl.)—San Domingan Satinwood

Source: Puerto Rico, British Honduras

Color: Creamy golden yellow

Pattern: Wavy grain

Characteristics: Fine grained; hard and quite heavy, works well with most took

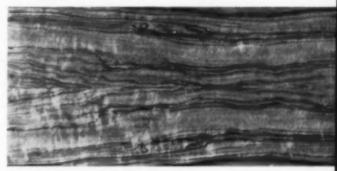
Uses: Furniture; marquetry; inlaying; turnery

Availability: Veneer (sliced) scarce. Lumber available

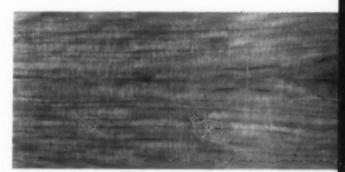
Price Range: Costly



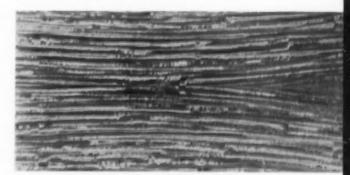
Oak, English Brewn, sliced (2 pieces, book-matched)



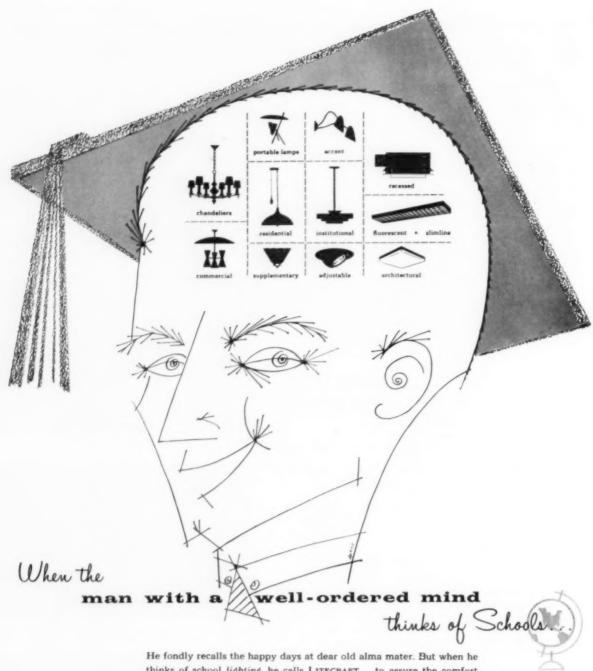
Paldas, quartered (2 pieces, book-matched)



Prima Vera, quartered (2 pieces, book-matched)



Satinwood, Ceylon, figured quartered (2 pieces, book-matched)



He fondly recalls the happy days at dear old alma mater. But when he thinks of school lighting, he calls LITECRAFT... to assure the comfort and happiness of students, and the satisfaction of clients. Your LITECRAFT Field Engineer, and your LITECRAFT Distributor's lighting specialists, are just waiting for the chance to help you work out an imaginative, efficient and economical solution to your school lighting problems. So call or write for a complete file of LITECRAFT lighting designs and specification data to enhance your next school project:

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THE . PINLAND HOUSE Lighting

the lighting professional's supermarket

FINE HARDWOODS FOR ARCHITECTURAL USES-12

(To be continued in a later issue)

By Burdett Green, Executive Vice President, Fine Hardwoods Association and James Arkin, A.I.A., Consultant, Architectural Woodwork Institute

SAPELE (Entandrophragma cylindricum) — Aboudikrou, Sipo, Tiama

Source: African Ivory Coast, Nigeria

Color: Dark red-brown

Pattern: Stripe and bee's wing

Cherecteristics: Considerable variation in grain, light portions of stripes lustrous; works fairly well with hand and machine tools; tough; harder and heavier than African Mahagany

Uses: Veneers for furniture; cabinetwork; interior decoration

Availability: Veneer (quartered) plentiful. Lumber available

Price Range: Medium

TEAK (Tectona grandis)—Burma Teak, Rangoon Teak

Source: Burma, Java, East India, French Indo-China

Color: Tawny yellow to dark brown, often with lighter streaks, not black as many think

Pattern: A great deal like Walnut, sometimes mottled and fiddleback

Characteristics: Strong; tough; aily. Like Walnut, except for ailiness, and is one of the finest cabinetwoods.

Uses: Paneling; furniture; floors; ship decking

Availability: Veneer (quartered, sliced) plentiful. Lumber available

Price Range: Costly



Source: West Africa

Color: Gray-brown to gold with black streaks

Pattern: Pronounced ribbon stripe

Characteristics: Easily worked; transverse grain shows irregularly sized, scattered pores

Uses: Furniture; paneling

Availability: Veneer (quartered) plentiful. Lumber available

Price Range: Medium

YEW

Two species of genuine Yew are availables

YEW, AMERICAN (Taxus spp.)-Florida, Pacific or Western Yew

Source: Pacific Coast and Southwestern Canada

Color: Reddish-brown

Pattern: Close-grained; often highly grain figured

Characteristics: Heavy; hard; available in very small sizes

Uses: Veneers—decorative areas of fine furniture

Availability: Rare as both veneers and lumber

Price Range: Costly

YEW, ENGLISH (Taxus, baccata)

Source: England

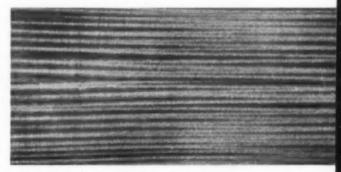
Color: Pale red, somewhat like Cherrywood or Pencil Cedar

Pattern: Smooth, lustrous grain. Wild grain gives much character

Characteristics: Strong; elastic

Availability: In small sizes, individual pieces often being only 4 to 6 in. wide and 2 to 6 ft long

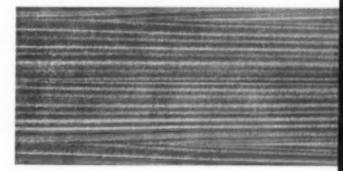
Price Range: Costly



Supele, quartered (2 pieces, book-matched)



Teak, flat cut, semi-figured (one piece)

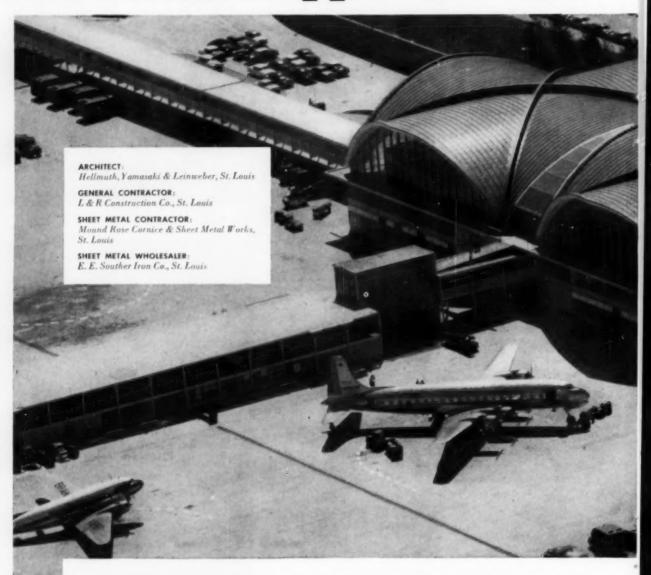


Tigerwood, quartered (4 pieces, book-matched)



Yew, sliced (2 pieces, book-matched)

It's Chase copper for new



Sweeping, curved roof on new \$4,500,000 Lambert-St. Louis Skyport uses 104,000 lbs. of Chase Sheet Copper

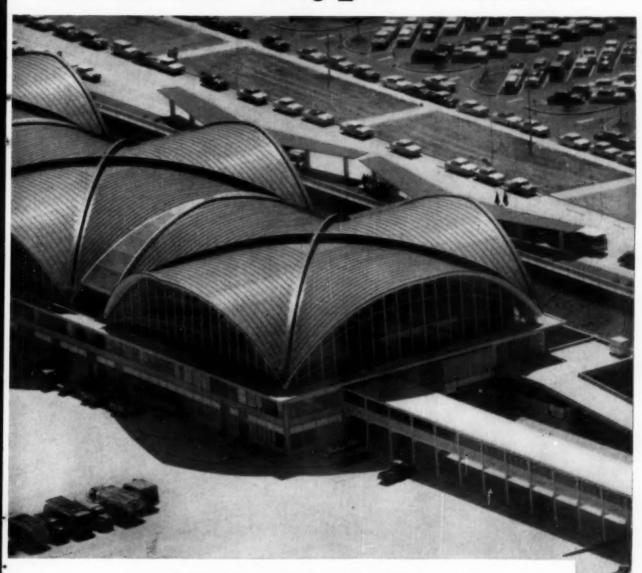
More than 50,000 square feet of surface! Three intersecting barrel-vaulted sections! This big roofing job called for flexible, long-lived 20 oz. and 24 oz. Chase Sheet Copper.

Using quality Chase copper really pays off! This versatile, malleable metal forms fast—fits the most complicated roof curves—helps you meet your

completion deadlines. It's durable—adds years of trouble-free service to your jobs. Chase Copper, properly installed, is without equal for permanent roofing. Then, too, it gives your jobs a rich appearance that improves with the passage of time.

For workability, durability, beauty, specify Chase Sheet Copper on your next job!

St. Louis Skyport Roof!



NOTE: Chase Copper Water Tube was used for plumbing, part of the heating system and the copper coils in the cooling equipment.

Plumbing Contractor: Corrigan Co., St. Louis.

Plumbing Wholeseler: Midland Plumbing and Heating Supply, East St. Louis.

Chase BRASS & COPPER CO. SUBSIDIARY OF KENNECOTT COPPER CORPORATION WATERBURY 20, CONNECTICUT

The Nation's Headquarters for Brass, Copper and Stainless Steel

Atlanta Baltimore Boston Charlotte Chicago Cincinnati Cleveland Dallas Denver Detroit Indianapolis Kansas City, Mo. Los Angeles Milwaukee Minneapolis Newark New Orleans New York
Providence Rochester St. Louis San Francisco Seattle Waterbury Grand Rapids Philadelphia Pittsburgh (Continued from page 268)

PORCELAIN ENAMEL, GRANITE RE-FACE DEPARTMENT STORE

Architect A. O. A. Schmidt, AIA, of Detroit has livened up the facade of the enlarged Jacobson's department store in Jackson, Mich. with polished Minnesota granite and a basketweave application of porcelain enamel. The photographs at right show how the porcelain enamel panels were used to tie together the fronts of what had been three architecturally unrelated adjacent buildings.

Modular Building Council

Plans have been announced for the formation of a Modular Building Council to help speed the adoption of Modular Measure. Initiated by the Joint Committee of the AIA and the Producers' Council as a means of broadening participation in this effort, the Council will include a wide range of membership, all with a common interest in improvement of the building industry's present dimensioning practices. By means of their participation in the Modular Building Council, members, it is hoped, will be able to resume technical studies in this field and so to extend applications of Modular Measure to other materials and construction methods than are used at present.

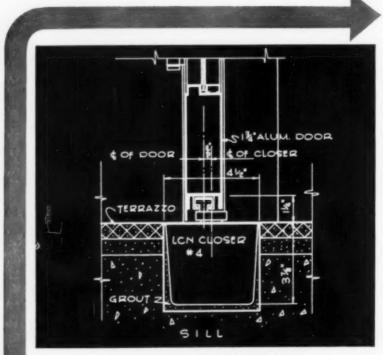
Although the Council will be primarily a fund-raising organization, it will also use subscriptions from its various members to finance technical development and education needed to make the use of Modular Measure spread faster. It will function also as a medium of communication and information on all aspects of dimensioning in building.

Handbooks of Tables

"Smoley's Tables Handbooks" have been published in new revised and enlarged editions: Parallel Tables of Logarithms and Squares, 688 pp. \$6; Five Decimal Logarithmic Trigonometric Tables, 200 pp. \$1.50; Parallel Tables of Slopes and Rises, 532 pp. \$6; Segmental Functions, 436 pp. \$5; Three Combined Tables (first three books in one volume), 1124 pp. \$10; Four Combined Tables (all four books in one volume), 1424 pp. \$12. C. K. Smoley's & Sons, Inc., P.O. Box 14, Chautauqua, N. Y.

(More Roundap on page 284)





CONSTRUCTION DETAILS

for LCN Floor Type Door Closer, Shown on Opposite Page The LCN Series 2-4-6 Closer's Main Points:

- 1. Full rack-and-pinion, two-speed control of the door
- 2. Mechanism concealed; lever arm disappears under door
- Door hung on regular butts, its weight carried independently of closer
- 4. Closer easily adjusted or serviced without taking door down
- Installed with or without threshold; may be flush with threshold or with floor
- 6. Used with wood or metal doors and frames

Complete Catalog on Request—No Obligation or See Sweet's 1956, Sec. 18e/L

LCN CLOSERS, INC., PRINCETON, ILLINOIS



MODERN DOOR CONTROL BY LCN -CLOSERS CONCEALED IN FLOOR

CHARLOTTE AUDITORIUM AND COLISEUM, CHARLOTTE, NORTH CAROLINA

Construction Details on Opposite Page



New savings and loan building utilizes

... to heighten

accent its modernism



Equipment Corporation of America, St. Louis, Mo.

Design it better with PITTSBURGH GLASS

PITTSBURGH materials

its architectural appeal

. . . bring it practical advantages





Pittsburgh's Pittcomatic® . . . "the nation's finest automatic door opener" . . . operates the Herculite® Doors at the entrance to the building, as well as on the side entrances. With the Pittcomatic Hinge, doors open automatically—at the lightest touch and with complete safety.

Here is a view of the employees' cafeteria, located on the second floor of the building, facing the harbor. This entire west wall is glazed with Solex, which makes it possible to take full advantage of the natural beauty of the outdoors while keeping room interiors cooler and glare at a minimum.



Your Sweet's Architectural File contains detailed information on all Pittsburgh Plate Glass Company products . . . Sections 6a, 15d, 20, 12e, 15a.



PAINTS . GLASS . CHEMICALS . BRUSHES PLASTICS . FIBER GLASS

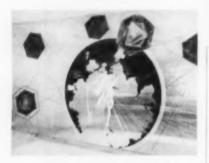
PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

TECHNICAL ROUNDUP

DRAMATIC MURAL USES EPOXY RESINS ON STAINLESS STEEL

A 9- by 34-ft mural in which epoxy resins have been used on stainless steel covers the entire east lobby wall of the new basic research laboratories of the National Carbon Company, which were dedicated last month at Parma, Ohio.



Designed and executed by artist Buell Mullen, famous for her pioneering work in steel, the mural features a hand symbolizing man's present grasp of scientific knowledge. Both controlled crystals, held by taut cords radiating from the hand, and uncontrolled crystals, indicating the many problems still to be solved, are formed of Bakelite epoxy resin paints, which can be supplied in endless layers to achieve a relief or sculptural effect and which are said to be compatible with stainless steel.

Noise Symposium

"Noise in Buildings" will be the theme of the Third Annual Meeting of the West Coast Noise Symposium on November 12th and 13th in Los Angeles. Some of the subjects that will be discussed are: Noise Control Criteria; Indoor and Outdoor Noise Sources: Design of Walls, Roofs and Windows; Noise Control Techniques for Heating and Ventilation, Plumbing, Appliances and Office Equipment; Noise Control Design in Homes, Apartments and Hotels, Schools, Offices, Hospitals and Churches, Conference Rooms, Auditoriums and Studios. Inquiries can be addressed to the Symposium at 610 South Main St. in Los Angeles.

New Trade Association

The Cold Cathode Association, Inc. has been formed, with headquarters at 515 Madison Ave. in New York, to promote the "technological advances of cold cathode lighting." One of the functions of the association will be to disseminate educational material regarding proper cold cathode specifying procedures, applications and technical data among "architects, engineers, utility representatives and to all members of the consuming public either at cost, or, to the greatest extent possible, free of charge." Bert C. Pretzer, president of the Illuminating Engineering Co. in Detroit, was elected president of the new association.

Design Loads in Buildings

The American Standard Building Code Requirements for Minimum Design Loads in Buildings and Other Structures, sponsored by the National Bureau of Standards and approved by the American Standards Association, is available in a 1955 revision. The Standard was revised to include the results of new research and experience and to allow for new construction practices, materials and techniques. The most significant changes are in the requirements for wind loads on buildings and signs and the inclusion of recommendations for wind loads on radio and TV towers. \$1.50. American Standards Association, 70 East 45th St., New York 17, N. Y.



You may remember this picture that illustrated an advertisement we ran back in early summer. When we photographed the kids, wide vistas of a long summer of unregimented fun danced in their eyes. You just couldn't see the Fall through the haze of swimming, fishing, camping, playing.

But time came around . . . swiftly, inexorably. The day came when the school bell shrilled its dirge. And classes, as they must to all kids, enveloped them in blackboards, potted plants and primers.

On the right are the same kids. We thought we'd better tell you. You'd never know it.





Ask any kid. The only thing shorter than one summer vacation is the next one. In between is a long, dreary business that stretches endlessly through the year. The only consolation-it won't last forever.

That new school has to last, though. And we can vouch for the entrances. When these kids' youngsters

are dragging in or busting out, those Amarlite doors will still be doing the job-beautifully. Important, too, to school budgets is the fact that Amarlite's unquestioned quality costs less than comparable wood or steel doors. We'll be glad to back this up with impartial facts and figures. Just ask us.



American Art Metals Company AMARLITE @luminum @nfrances

- · Atlanta, Georgia · Brookfield, Illinois
- · Dallas, Texas · Paramus, New Jersey

THERMOPANE® HELPS YOU CREATE PLEASANT ENVIRONMENT



Offices of The Electric Controller & Mfg. Co., Division of Square D Co., Cleveland, Ohio.

Architects: A. E. Rowe & Associates, Cleveland.



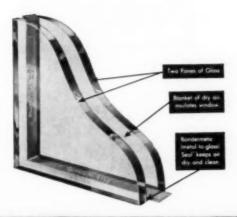
LIBBEY · OWENS · FORD ... a Great Name in Glass

FOR BUSINESS . . .

When employes are comfortable, personnel relations are improved . . . efficiency is increased.

Thermopane insulating glass contributes to their comfort because it cuts drafts near windows . . . helps air-conditioning and heating systems perform at peak efficiency . . . subdues distracting outside noise. And, when Thermopane is made with heat absorbing glass, even sun heat can be controlled.

These characteristics give architects greater latitude in designing buildings with large expanses of glass. Learn more about *Thermopane* and its qualities. Send the coupon, or call your L·O·F Distributor.





Offices of The Jewel Tea Co., Inc., Melrose Park, Ill. Architects: A. Epstein & Son, Chicago.

NOW... NORMAL

Thermopane

INSULATING GLASS

- Many standard sizes in local stocks right now!
- Only <u>60</u> days for factory shipment of special sizes!

Thermopane FACTS

Technical information is available to help architects and engineers design for the most effective and most

economical performance of Thermopane insulating glass. It is all in our Thermopane Manual which will be sent on request. (See coupon below.)

Thermopane is sold by local L·O·F Glass Distributors and Dealers, listed under "Glass" in yellow pages of phone books.



Libbey Owens-Ford Glass Co., Dept. 85106 608 Madison Ave., Toledo 3, Ohio Please send me a copy of the Thermopane Manual.

Name _____(Please Print)
Street _____



See the clear, true undistorted reflections in the windows of this Prudential Savings & Loan building. The glass is Parallel-O-Plate. Architect: Gerald H. Bense & Associates, Whittier, California.

these reflections
tell a
true story...
looking in,
looking out,
looking at

When reflections in a window are distorted, seethrough vision is distorted too. As a result, the building makes a shoddy impression.

The reflections in the window of this building are clean and true because this glass is L·O·F Parallel-O-Plate* — the most distortion-free (the only twin-ground) plate glass made in America.

Yet in most localities, Parallel-O-Plate Glass costs no more than ordinary plate glass.

So it makes good sense to have Parallel-O-Plate Glass in your windows, storefronts, display cases and mirrors. You'll find it's so much better — looking in, looking out, looking at. Read the column at the right for important facts on Parallel-O-Plate.



PARALLEL O . PLATE GLASS

Finest plate glass made in America...only by LIBBEY. OWENS. FORD a Great Name in Glass

PARALLEL · O · PLATE

FACTS





COMPARE the reflections of the upsidedown signs in the mirror of conventional plate glass (top) and the mirror of Parallel-O-Plate* (bottom).

Parallel-O-Plate Glass is more distortion-free than ordinary plate glass because its surfaces are more parallel.

This great degree of parallelism is the result of a special kind of grinding called twin-grinding.

The ordinary method is to cut off a section of glass, grind one side, turn it over and grind the other side.

In the twin-grinding process, the glass moves from the furnace through the new annealing lehr and into the twingrinding process where both sides are ground simultaneously in a continuous ribbon 975 feet long. It's precision made

For further information, call your Libbey Owens Ford Distributor or Dealer (listed under "Glass" in the yellow pages). Or write Dept. 75106, Libbey · Owens · Ford Glass Company, 608 Madison Avenue, Toledo 3, Ohio, ***

LIBBEY OWENS FORD

PRODUCT REPORTS

(Continued from page 269)

Copper Tube Color Coding

A system of identifying copper water tube with a variety of colored inks has been developed to provide rapid and certain identification of the type of water tube desired. Revere Copper and Brass, Inc., 230 Park Ave., New York 17.



Plastic Expansion Joint

Plasti-Grip is an extruded plastic joint for use between two pours of concrete. It can be used as an expansion joint, a construction joint or a waterstop. Its deep grooves grip into the concrete, and its reinforced U-shaped center pleat expands and contracts with the joint. Available in continuous strips 100 ft long and 5 or 6 in. wide, it is said to resist water pressures up to 125 ft head, to stay flexible even in extreme low temperatures and to be alkali- and acidresistant. Progress Unlimited, Inc., 15 West 44th St., New York 36.



Automatic Washer-Dryer

Five automatic washers and four electric dryers are featured in Frigidaire's 1957 line. The washer has a variety of features, including underwater bleach and detergent dispenser, 12-min "small load" cycle and cold water rinse. Dryer has "hands-free" foot pedal door opener. Control towers replace backpanels for switches and dials. Models come in pink, yellow, green and white. Frigidaire Dir., General Motors Corp., Dayton 1, (More Products on page 293)



THE DICKS-PONTIUS COMPANY

5302 Huberville Ave., Dayton 3, Ohio

Alexandria, Va. + Dallas, Tex. + Decater, Ga. + Xenia, O.



build better schools...

with the finest of structural timbers

Economy for tight budgets . . . durability for generations of strenuous use . . . attractive appearance always - this is the combination you get when you use structural members by Timber Structures, Inc. for framing your schools. To architects and builders of school plants . . . Timber Structures, Inc. offers the benefits of more than a quarter century of experience in timber engineering, laminating and fabricating. A 30-acre plant, complete with specialized equipment and manned by a staff of engineering and fabricating specialists, insures that your work is done on time and to your exact specifications. Let us show you how dependable Timber Structures service will facilitate your next classroom, gymnasium, library or multi-purpose room assignment. Consult your nearest Timber Structures representative, or fill in and mail the coupon below for a copy of the informative booklet, "Timber Framing for Modern Schools".



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TIMBER STRUCTURES, INC. OF CALIFORNIA

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30% less labor Costs, 15% less Waste

With CELOTEX

Double-Waterproofed INSULATING SHEATHING

Because Celotex Insulating Sheathing is easier to cut and fit, it goes up 30% faster, with up to 15% less waste. It insulates and weather-proofs as it builds, at one cost, and makes building paper unnecessary. Laminated for extra strength and rigidity, with no corner bracing needed with 4' wide, 25/2" thick Celotex Insulating Sheathing to meet FHA requirements. Has approximately 30% greater strength than ordinary sheathing with let-in bracing, as proved in actual demonstrations by independent testing laboratories.

Only Celotex Insulating Sheathing is made from tough, interlocking, long Louisiana cane fibers . . . nature's long-life fibers . . . protected against dry rot and termite attack by the exclusive Ferox® Process. This ideal basic material for insulation board combines strength, lightness, and resistance to deterioration. Moreover, this sheathing is double-waterproofed to seal out damaging, job-delaying moisture . . outside, by protective asphalt coating . . . inside, by special processing of the fibers. It provides practical job advantages unmatched by any other brand of sheathing.

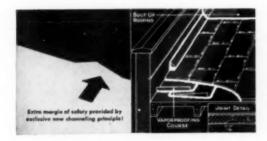
For dependable, easily-applied, time-saving sheathing . . . be sure to specify Celotex *Double-Waterproofed* Insulating Sheathing.



INSULATING SHEATHING

The Celotex Corporation, 120 S. LaSalle St., Chicago 3, Illinois

These Celotex Insulation Products Can Simplify, Improve, Cut Costs, On Your Construction Jobs!



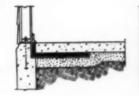
CELOTEX CHANNEL-SEAL ROOF INSULATION

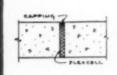
New safeguard against blistering, and separation of felt and insulation! Units form network of channels to permit equalization of air pressure throughout roof area. Asphalt-coated on both sides, all edges. Rigid, tough, yet light, easy to handle. Coated surface assures positive bond to both roof deck and roofing felt. Thicknesses for every job specification.

FLEXCELL* Bituminous Impregnated Cane Fiber Board

As PERIMETER INSULATION, Flexcell contributes toward a warmer concrete slab floor by reducing possibility of heat loss through floor edges.

Write New for full data on various types of job-proved Colotex Cane Fiber Insulation:





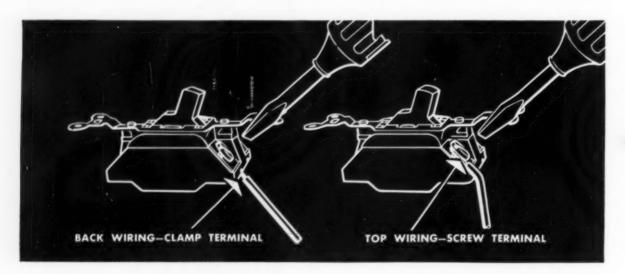
As EXPANSION JOINT FILLER for driveways, walks, curbs, and gutters, Flexcell expands and contracts with concrete slab—is not affected by temperature changes . . . does not extrude, is maintenance-free!

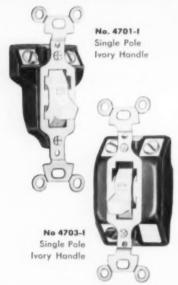
THE CELOTEX CORPORATION . DEPT. AR-106 . 120 S. LA SALLE ST., CHICAGO 3, ILLINOIS

NEW DESIGN

BRYANT SILENT MERCURY SWITCHES

Higher Rating • Optional Wiring • Easier to Install





Control Tungsten Filament or Flourescent Lamp Loads at Full Rated Capacity

HIGHER RATING—15 Ampere 120 Volt A.C. Rating makes this switch particularly desirable for the control of tungsten filament and fluorescent lamp loads without derating. A.C.-D.C. Rating — 10 A. T. 125 V. — 5 A. 250 V.

OPTIONAL WIRING — Either screw terminal top wiring or clamp terminal back wiring.

EASIER TO INSTALL — Unique design permits rapid connections — whether top or back wired.

APPLICATIONS — Especially suited for hospital, residential and other installations where completely silent operation is desired.

AVAILABLE — In single or double pole, 3 and 4 way types with brown or ivory handles.

Listed by Underwriters' Laboratories, Inc.



THE BRYANT ELECTRIC COMPANY

Bridgeport 2, Connecticut . CHICAGO . LOS ANGELES

PRODUCT REPORTS

Germ-killing Wall Paint

Satin-X is a vinyl latex interior wall paint that is said to kill germs on contact and yet have no harmful effect on people or animals. The new paint, which contains a powerful, odorless, non-poisonous additive, is said to be effective on such disease organisms as strep-throat, nephritis, erysipelas, ton-silitis, typhoid fever and food poisoning. The reaction is said to last for a period of two years or more. Jones-Blair Paint Co., Dallas, Tex.



Noise Reduction Panel

A low-cost acoustical material that is both sound-absorptive and soundproof is said to be the first such panel that can be easily cut to size. The E.F. panels can be installed as ceiling-high or free-standing partitions, rolling panels, roofed enclosures, etc. Steel supporting studs, channels, stiffening rails and all fastening devices are available with the panels. Standard size is 4 by 8 ft. Elof Hansson, Inc., Acoustical Dept., 711 Third Ave., New York 17, N. Y.



Bathroom Lighting

The Symphony collection of bathroom lighting fixtures designed by Italian architect-designer Maurizio Tempestini includes five designs made of imported glass with polished chrome or brass details. The fixtures, like the "conk shell" shape shown above, follow the contour of the bulb and can be used horizontally or vertically on the wall or ceiling or in pairs flanking the bathroom mirror. Lightolier, Inc., 11 East 36th St., New York, N. Y.

(More Products on page 295)

DEMAND THIS TRADEMARK!

DOUBLAS FIR PLYWOOD
PLYSCORD
INTERIOR TYPE GRADE C-D

Here's why! PLYSCORD

QUALITY-TESTED* FOR:

- 1. Correct veneer grades—inside and out
- 2. Strength, rigidity and stiffness
- 3. Dependable glue-line performance

The true quality of plywood sheathing isn't always visible. What's inside—glue quality...inner-ply quality—is all-important.

PLYSCORD is quality-tested under established industry procedures, according to published Commercial Standards.

Insist on DFPA-PLYSCORD* when you buy, specify, or use plywood sheathing!

Douglas Fir Plywood Association (DFPA), Tacoma, Wash.—a non-profit industry organization devoted to product research, promotion and quality maintenance.

DEPT. AR





More and more air conditioning specifications call for **Worthington Induction Systems**

- Exceptionally quiet operation
- · Small, space-conserving ducts
- Individual room or occupant control
- · Draft-free air distribution
- · Positive ventilation
- · Remote location of all mechanical equipment
- Minimum, centralized maintenance
- · Flexibility of partition changing.

WORTHINGTON



CLIMATE ENGINEERS TO INDUSTRY, BUSINESS AND THE HOME

A few of the many modern American buildings for which the new Worthington high pressure induction air conditioning system has been specified.



LOUISIANA

CHESAPEAKE & POTOMAC TELEPHONE CO., RICHMOND, VA.

Engineer: Baskerville & Son, Richmond, Va. Architect: Same Contractor: Wachter & Wolff, Richmond, Va.

LACKLAND AIR FORCE BASE SAN ANTONIO, TEXAS Architect: Associated Architects, Houston, Texas & York & Sawyer, New York N. Y. Contractor: C. Wallace Plumbing Co., Houston, Texas

TRAVELERS INSURANCE CO. HARTFORD, CONN.

Engineer: Jansen & Rogan, New York, N. Y. Architect: Voorhees, Walker, Smith & Smith, New York, N. Y. Contractor: Alvord & Swift, New York, N. Y.

AMERICAN MUTUAL HARDWARE INSURANCE CO. MINNEAPOLIS, MINN.

Engineer: Thorshov & Cerny, Minneapolis, Minn. Architect: Same Contractor: Supposer Air Condi ontractor: Spencer Air Conditioning Co., Minneapolis, Minn.

N. Y. STOCK EXCHANGE BUILDING (20 BROAD ST.) NEW YORK, N. Y.

Engineer: Jaros, Baum & Bolles, New York, N. Y. Architect: Kahn & Jacobs & Sidney Goldstone, New York, N. Y. Contractor: Raisler Corp., New York, N. Y.

LIFE & CASUALTY INSURANCE CO. NASHVILLE, TENN.

Engineer: Burns & Thorpe, Memphis, Tenn. Architect: Edwin A. Keeble Assoc., Inc., Nashville, Tenn. Contractor: Buchi Plumbing Co., Nashville, Tenn.

LOUISIANA STATE CAPITOL BATON ROUGE, LA.

Engineer: De Laureal & Moses, New Orleans, La. Architect: Dreyfus, Seiferth & Gibert, New Orleans, La. Contractor: James F. O'Neil, New Orleans, La.

OUINCY MUTUAL FIRE INSURANCE CO., QUINCY, MASS.

gineer: Cram & Ferguson, Boston, Mass.

Architect: Same
Contractor: C. P. Blouin, Boston, Mass.

UNIVERSITY OF NEBRASKA LINCOLN, NEBRASKA

Engineer: Carl Goth, Omaha, Nebraska Architect: Hazen & Robinson, Lincoln, Neb.

Contractor: Ray Martin Co.,
Lincoln, Neb.

MUTUAL BENEFIT INSURANCE CO. NEWARK, N. J.

New York, N. Y.

Regineer: Syska & Hennessy, Inc.,
New York, N. Y.

Architect: Eggers & Higgins,
New York, N. Y.

Contractor: Mance Corp.,
New York, N. Y.

BANK OF NEW YORK NEW YORK, N. Y.

Engineer: Voorhees, Walker, Smith & Smith, New York, N. Y.
Architect: Same Contractor: J. L. Murphy, Inc., New York, N. Y.

ILLINOIS POWER CO. DECATUR, ILL.

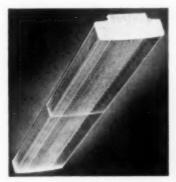
Engineer: Holabird & Root & Burgee, Chicago, III. Architect: Same Contractor: R. H. Bishop Co., Champaign, Ill.

Profit by the experience of these architects, engineers, and contractors. Specify Worthington High Pressure Induction Air Conditioning for your next building. Be sure you're getting the very best. For complete details, write: Worthington Corporation, Section A.6. 124, Harrison, New Jersey.

PRODUCT REPORTS

Exterior Masonry Coating

Rubber-Coal exterior masonry coating has now been fortified with acrylics and is available in 10 colors. The coating can be applied over damp surfaces, it is claimed, allowing the dampness in the wall to pass out through the paint film without chipp ng or peeling, and yet the paint film acts as a water shield to reduce moisture penetrat on. Tests made under Federal specification show that it is mildew-resistant, fire-resistant and highly resistant to fumes o'ncids and alkalis. The Wilbur & Williams Co., Boston 35.



Commercial Light Fixture

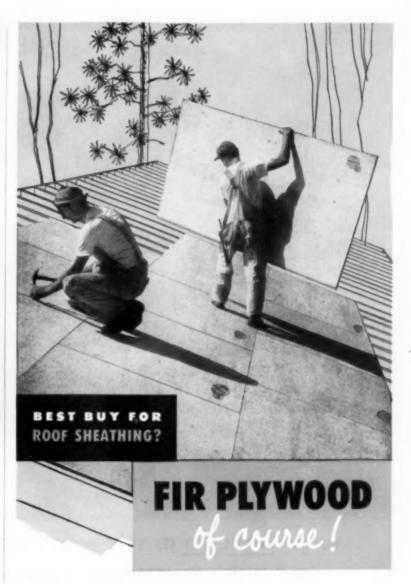
The Holiday is an enclosed surface-mounted commercial light fixture designed specifically for application in low-ceiling areas. The hinged 4-ft enclosure incorporates two injection-molded prismatic elements. Lens control provides sufficient upward component to light the surrounding ceiling area. It can be furnished as 4-ft or 8-ft units with ends or 8-ft fill-in sections with coupling. Day-Brile Lighting, Inc., 5411 Bulwer Are., St. Louis, Mo.



Handwoven Fabrics, Rugs

Unusual tribal rugs, handwoven fabrics and other native artware from Morocco have been collected by Margit Pinter and are available at Maurelania Fabrics, Inc., 140 East 56th St., New York 22.

(More Products on page 297)



here's why...

- Lower in-place costs (saves up to \$2.50 per square)
- ->>> 25% faster application
- ->>> Crips nails firmly—will not pull loose in high winds
- >>> Strong; braces building
- >>> %" panels on 24" centers meets FHA requirements
- Dry! Won't shrink or swell
- ->>> Ideal base for shingle, composition or built up roofing
- ->>> Far less waste, fewer nails



Handy 48-page specification guide. Contains application, finishing, grade data. Douglas Fir Plywood Assoc. Dept. AR, Tacoma 2, Washington.

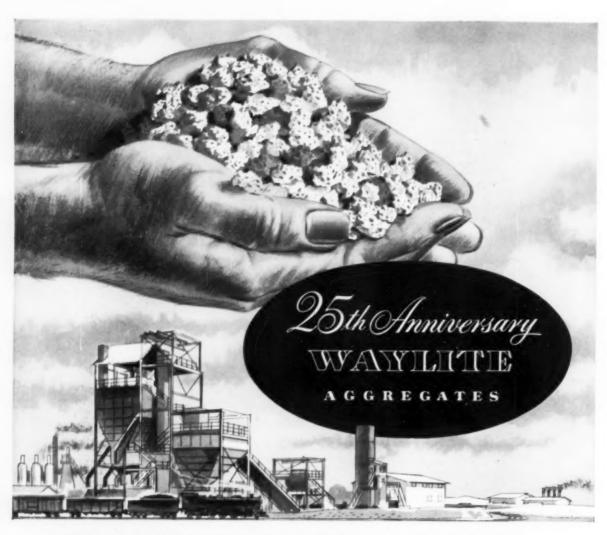


INSIST ON DEPA GRADEMARKS!

DFPA grademarks are your assurance of plywood quality. Specify PlyScord* grade for subfloors, wall and roof sheathing. Other grades for other jobs.



Plywood of other western softwoods available; look for this DFPA grademark



WHY WAYLITE IS THE MOST WIDELY USED OF THE LIGHTWEIGHT AGGREGATES

WAYLITE AGGREGATE PLANTS
ARE LOCATED AT:

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> CHICAGO (2 PLANTS)

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HARRISBURG

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YOUNGSTOWN

It has now been 25 years since Waylite aggregate was introduced to architects, builders and products manufacturers.

It is the most widely used of all lightweight aggregates. Its physical properties and characteristics are fully documented and widely known. It can be specified with the utmost confidence because of its dependable uniformity.

Waylite has unique and exclusive merits as a material. Masonry units made with Waylite aggregate gives a combination of 3 desirable features...an insulative wall... a decorative interior finish...and complete acoustical treatment. And all for one low cost.

Plain and reinforced concrete made with Waylite aggregate gives a weight reduction of 30% to 35%. This permits important economies in design.

Waylite aggregate's uniform high quality begins with the design of the plant in which it is processed. Used exclusively by Waylite, these processing plants are permanent installations. Each requires a greater capital investment in order that precise quality control can be achieved. They are skillfully operated with the same end in view.

In the future as in the past, you can specify or use Waylite with complete confidence that it will serve you well.



THE WAYLITE COMPANY

20 N. WACKER DRIVE, CHICAGO, or BOX 30, BETHLEHEM, PA.

PRODUCT REPORTS



Year-round Air Conditioner

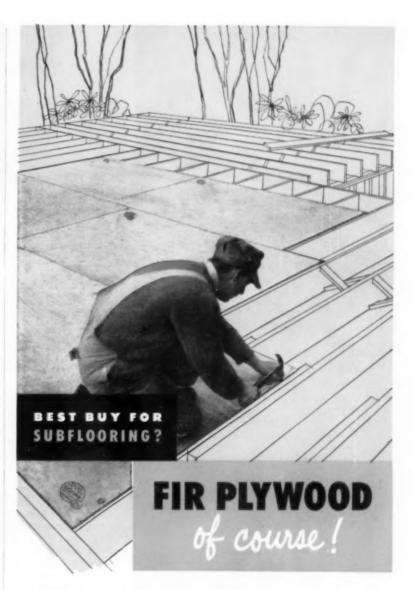
A fan and coil year-round air conditioner for multi-story buildings supplies heating and cooling in one compact unit, including air filtration and ventilation. A cabinet unit is designed for free standing mounting under a window or along a wall. A recessed unit is designed to be fully recessed in a wall under a window stool. The units are connected to a supply and return water piping system emanating from a remote control heating and cooling system. Twin blowers in the unit draw room air through the filter, blend it with fresh filtered outside air and direct it over the coil, where it is cooled and dehumidified during hot weather and heated in cold weather. Worthington Corp., Harrison, N. J.



Touch-action Wall Switch

Touchette is a wall switch which can be activated by a touch of the finger, hand or elbow. The unit fits both standard toggle wall plates and standard outlet boxes. It operates on full line voltage, with relays, transformers or mercury, and no special wiring is required. Rated at 15 amp. 120/277 volts a.c., it is designed to operate either incandescent or fluorescent lighting systems at full rated capacity or motor loads up to 80 per cent of the rated switch capacity. Rodale Mfg. Co., Inc., Emmaus, Pa.

(More Products on page 299)



here's why...

- ->>> 50% time and labor savings
- ->>> Strong, solid, squeak-free
- ->>> Won't warp, twist or cup
- ->>> Fits standard jois spacing
- ->>> Adds strength and rigidity
- ->>> Fewer nails, less waste
- >>> Seals out drafts from below
- →>>> Large, light, easy-to-handle







Radiant heating chosen for cerebral palsy school!



For the ill, afflicted or handicapped, who endure so much emotional distress, physical comfort becomes all the more important. Definite therapeutic values are ascribed to physical well being derived from proper lighting, ventilation, sanitation, pleasant surroundings . . . and modern heating.

More and more (as in the Walter D. Matheny School for Cerebral Palsy Children, Peapack, N.J.) radiant heating systems are selected to provide vital, draft-free heat, warm floors and equalized temperatures.

For these comfort-giving radiant systems steel pipe is first choice. Proved in more than 60 years of heating applications, it has the qualities of economy, durability, weldability and formability required for successful installations. In fact it is the most widely used pipe in the world for heating, plumbing, snow melting, fire sprinkler systems, structural applications, gas and water lines!

Write for the free 48 page color booklet "Radiant Panel Heating with Steel Pipe."

Committee on

STEEL PIPE RESEARCH

AMERICAN IRON AND STEEL INSTITUTE

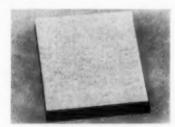
Steel Pipe is First Choice

150 EAST FORTY-SECOND STREET, NEW YORK 17, N. Y.

PRODUCT REPORTS

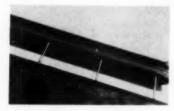
Multi-unit Recessed Lighting

A new line of recessed Eliptisquares which are grouped into two-light and four-light patterns to provide greater flexibility of illumination in a given area has been developed for school and commercial applications. Heart of the multi-unit lighting patterns is the Amcolens, a clear, prismatic glass which directs light in a manner flattering to objects below. The Art Melal Co., Cleveland, Ohio.



Stippled Acoustical Tile

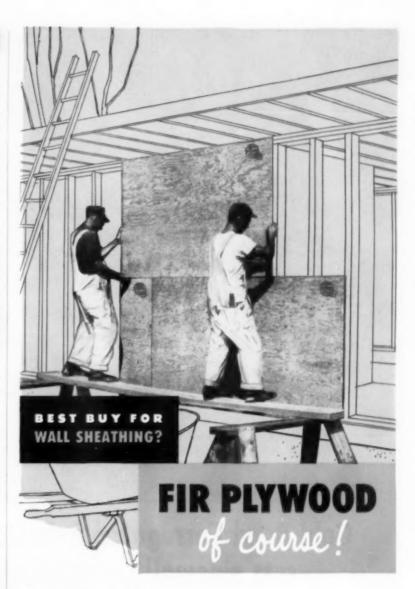
Fresco is a non-combustible acoustical tile with the appearance of stippled plaster. Its rough finish gives the appearance of a monolithic ceiling. The tiles are available in 12- by 12-in. and 12- by 24-in. sizes with butt joints. They can be either installed on a concealed mechanical suspension system or adhered directly to the underside of any surface. They come in white, but can be spray-painted. Owens-Corning Fiberglas Corp., Toledo 1, Ohio.



Plastic Expansion Joint

Durajoint is a polyvinyl chloride expansion joint and waterstop designed for use between adjacent sections of plain, reinforced or precast concrete structures. Extruded with specially designed longitudinal ridges on both sides to insure the distribution of critical pressures and enhance the holding power, Durajoint is said to have extreme elasticity and excellent wear resistance, allowing it to handle vertical or lateral movements of masses of concrete without being sheared, W. R. Meadows Inc., 7 Kimball St., Elgin, Ill.

(More Products on page 302)



here's why...

->>> Finest construction known

->>> → 25% time and labor savings

->>> Twice as strong and rigid

->>> -> Ideal for shear walls

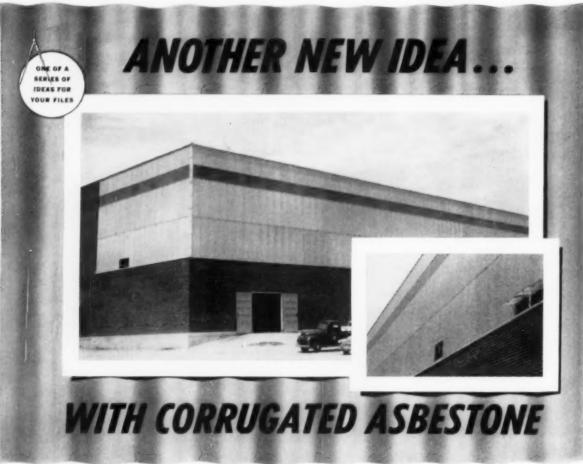
->>> Won't split or puncture

->>> Far less waste, fewer nails

->>> = Eliminates diagonal bracing

→>>> ➤ Solid, grips nails firmly





Engineer-Architect. J. E. Sirrens Co., Greenville, S. C.; Contractors: R. P. Farnsworth & Co., Inc., New Orleans, La.; Dickmann Pickens-Bond, Little Rock, Ark.; Applicator-Erector: Taylor-Seidenbach, Inc., New Orleans, La

Gold Bond Corrugated Asbestone cuts sidewall construction costs 50%

Crossett Paper Mills in Crossett, Arkansas, cuts the usual cost of sidewalls for a plant of this type in half, by using Gold Bond Corrugated Asbestone "400"!

Outside, the light-and-shadow corrugations of ASBES-TONE "400" add distinction to this strikingly handsome 16-million-dollar plant.

Inside, the walls withstand the near-saturation humidity produced in the manufacture of bleached food board for cartons and the inherent coolness of CORRUGATED ASBESTONE helps keep the interior cool, too.

The corrugated plastic used in the strong horizontal of the window frieze fits with the corrugations of the ASBESTONE perfectly, and eliminates the need for expensive window framing. How many uses can you think of for Gold Bond CORRUGATED ASBESTONE? Whether it's in remodeling or new construction, commercial or industrial, ASBESTONE creates striking good looks and permanence—means added strength and lower maintenance. Write for full details on this versatile.

attractive material. Address Dept. AR-106, National Gypsum Company, P. O. Box 5257-B, New Orleans 15, La.

Gold Bond Technical Bulletin No. 2032 and Booklet No. 2273 give full specification and uses of Gold Bond CORRUGATED ASBESTONE Products.

CORRUGATED ASBESTONE "400"

NATIONAL GYPSUM COMPANY



That's all it takes-just 1¢ per sq. ft. in an 8" width wall-to get integral leak protection with Horn's Hydratite® Plus. When added to mortar, this concentrated powder reduces water absorption and initial shrinkage. The mortar stays workable on the brick . . . insures perfect contact and complete hydration. Hydratite Plus gives you this outstanding water protection by anchoring the mix water to the cement, sand and lime particles with a bond greater than the suction of the brick. The result is a tighter wall with far better adhesion between the mortar and bricks. You get similar protection for concrete applications with a related Horn product-Hydratite. For A.I.A. Specification Data on "built in" leak protection with Hydratite and Hydratite Plus, write on your company letterhead to Dept. H24-1015. "in an 8" wall . C. Horn Companies Subsidiaries & Divisions **Chemical Corporation** 10th Street and 44th Avenue, Long Island City 1, N. Y.

PRODUCT REPORTS

Electric Forced Air Heating

The Electrend electric forced air heating system now incorporates a highly sensitive hydraulic action thermostat said to be capable of maintaining a minimum of ½ deg temperature differential. In conjunction with the thermostat a bonnet control has been added to operate the fan independently of thermostat action. The Electrend unit consists of an air scoop at the top which pulls in warm ceiling air, forces it down by fan





Get the Facts on Why "Paper Cured" Concrete is Best



Read Why Sisalkraft is The Most Effective Curing Medium



Company.....

Address.....

City Zone . . . State

through a heating chamber and then out into the room through a grille just above floor level. The unit is shown above being installed between the studs of a wall and after the finished wall has been completed. Electrend Products Corp., State and Water Sts., St. Joseph, Mich.



Vented Picture Window

Vent-View is an all-aluminum picture window with awning-type vents. It is available with standard Thermopane for the fixed lites and separate screens for the vents. The unit has an integral fin for nailing directly to the sheathing. Wisco Aluminum Corp., 3900 A St., Detroit 16, Mich.



End Welding Stud

A new type threaded end welding stud designated Type CP has tensile strength as much as 13 per cent greater than the former standard MG stud and provides improved welding qualities, according to the manufacturer. The same templates now being used with MG studs can be used with the new granular-fluxed studs up to and including ½ in. diameter. Nelson Stud Welding Div., Gregory Industries, Inc., Lorain, Ohio.

(More Products on page 304)



Write for the complete story-

Q-Floor

*The original cellular steel floor . . since 1930 over 12,500 installations

H. H. Robertson Company

2404 Farmers Bank Building • Pittsburgh 22, Pennsylvania

In England—Robertson Thain Ltd., Ellesmere Port, Cheshire
In Canada—Robertson-Irwin Ltd., Hamilton, Ontario

NAME	TITLE	
COMPANY		
ADDRESS	CITY	

"This is just the first reason for Q-Floors. Think of the electrical availability. After all, you're investing for thirty, forty, fifty years. And you sometimes forget that floors are what a building is for. Even though the floor is a small fraction of total cost, floor space earns the income. It should be alive with ducts,

floor space earns the income. It should be alive with ducts, pipes, wires, the earning arteries of a structure. You don't want your building born with hardened arteries, with monolithic

slabs for floors.

"See how the load-carrying steel cells of Q-Floor are crossed over by raceways for wires of every conceivable electrical service. This is your assurance that your investment will keep step with future increased demands for electrical business machines. You can put an outlet on every six-inch area of the exposed floor. It literally takes only a few minutes. Floor layouts are permanently flexible. Alterations tremendously simplified. It saves a huge amount of money over the years.

"And Q-Floor costs less than the carpet that covers it.

"There is no reason for not having Q-Floors."



THE WAL-LOK WAY





When a mason uses reinforcing in a masonry wall, he lays the reinforcing right on the last course. With WAL-LOK, Cross Rods are welded across the Side Bars. The mason puts WAL-LOK on the wall with the Cross Rods DOWN.





The Cross Rods hold the Side Bars up away from the blocks and the mortar completely surrounds each Side Bar. With WAL-LOK, the mortar grips all the way around!

All WAL-LOK is also deformed and knurled for a positive bond the full length, All this still permits a quarter inch mortar joint,

THE WRONG WAY





With ordinary reinforcing, where all the wires are butt-welded in one plane, the Side Bars rest right on the blocks. The mason puts on his mortar. Steel doesn't float, so the mortar can't get under the Side Bars and the mortar bonds only to the top and sides.

WHY EXPECT MORTAR TO DO SOMETHING YOU CAN'T DO?





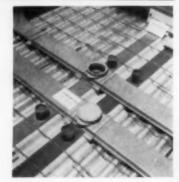
When you try to hang onto a rod, you don't hold it with your finger tips. You grip it in your fist with your fingers wrapped all the way around.

Why gamble—on cracked walls or wall failures. WAL-LOK costs so little yet adds so much to the strength and value of the structure.

WRITE TODAY for your copy of WAL-LOK's new folder showing sizes, specifications and test results.



ADRIAM PEERLESS, INC. 1406 E. Michigan St. Adrian, Michigan PRODUCT REPORTS



Electrified Concrete Floors

Type E-R (for "electrically ready") Cofar cellular unit for electrification of reinforced concrete floors is used in combination with standard Cofar, which is a combined steel form and reinforcing unit for reinforced concrete floor construction. As shown above in use with standard Cofar, it has the same depth but wider troughs. The troughs are capped to form cells to carry the various power, telephone and signal circuits required in office buildings. Like Cofar, it has transverse T-wires welded to each corrugation and provides both a form and reinforcing for poured concrete slabs. It is produced in one-, two- and three-cell units. Junction box and header duct (shown above) serve to activate the cells, Granco Steel Products Co., 6506 N Broadway, St. Louis 15, Mo.

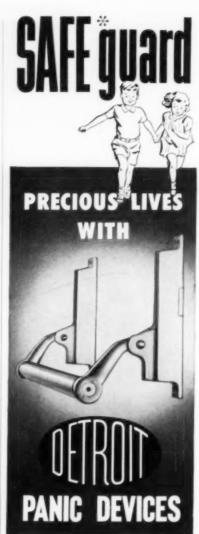




Corner-Sectional Sofa-Sleeper

Turn-A-Beds which are corner sectionals by day can be converted to single, double or twin beds by night for extra sleeping accommodations. The units open on an arc mechanism without disturbing furniture arrangement. Turn-A-Bed Co., 192 Lexington Ave., New York, N. Y.

(More Products on page 308)



Rely on Detroit's simplicity of design and high quality for maximum safety and protection. Detroit panic devices are standard, concealed, reversible and Underwriters' Approved. Write for descriptive literature.

Delroil Hardware

Mfg. Company

1320 Mt. Ellion Street

Detroit 7, Michigan



SPECIFICATIONS: Panels, stiles and doors shall be flush construction, and shall be made of two face plates of not less than 18-gauge enameling iron with formed edges, cemented under pressure to fiberboard core and joined by welding abutting edges at suitable intervals. Edges shall be bound with die-drawn stainless steel moldings interlocked under tension onto formed edges, mitered and welded at corners and welds ground smooth. Partitions and doors shall finish 1 " thick; stiles shall finish 1 \(\frac{1}{2} \) thick.

All surfaces, concealed and exposed, shall receive a vitreous porcelain enamel ground coat. All exposed surfaces shall then be given a cover coat, in a color selected from the Weis color chart of decorator colors.

Doors shall be hung on WEIS gravity hinges with upper hinge mounted in recess in edge of door. Doors shall be fitted with slide bar latch, combination keeper and humper and coat hook with rubber-tipped humper, all to be brass, chromium plated. Latches and coat hooks shall be attached with theft-resistant screws.

HENRY WEIS MFG. COMPANY, INC. 5656 Weisteel Building, Elkhart, Indiana



SUDE BAR LATCH



KEEPER AND BUMPER



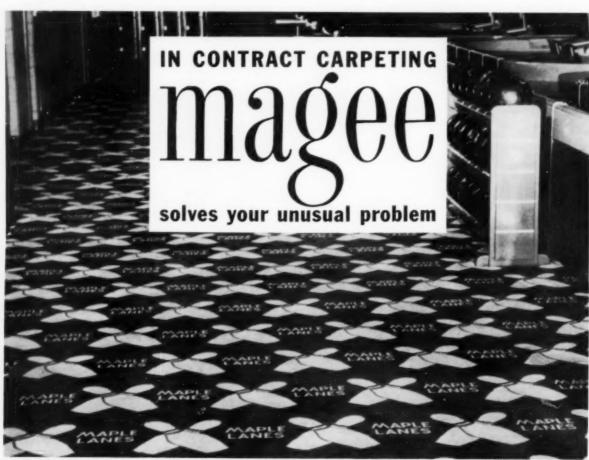
COMBINATION COAT HOOK



DOOR HINGE



UNIVERSAL BALL BEARING GRAVITY TYPE BOTTOM DOOR HINGE, CUTAWAY VIEW



DUMBARTON (illustrated), specially woven for Maple Lanes Bowling Alley in Detroit, is just one example of how Magee can solve any contract carpet problem

Heavy Traffic? Magee can custom-weave the right carpet for your traffic problems.

Cost Factor? Magee has *the* carpet to permit you to buy within your budget.

Maintenance? Magee contract carpeting ends the high cost of bare floor maintenance... in hotels, motels, churches, institutions.

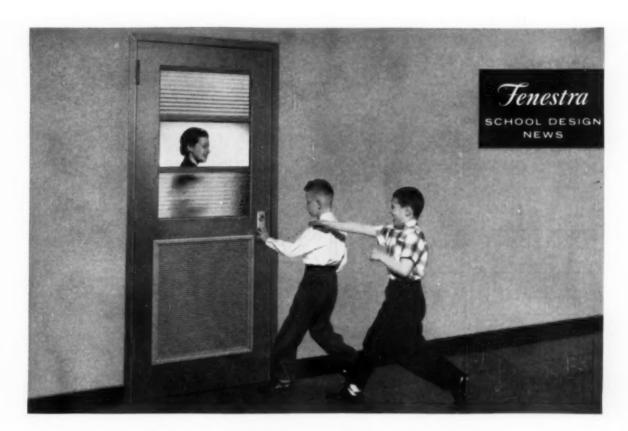
Décor? Magee can create the carpet you need for any decorating problem.

Remember, there's a fine Magee contract carpet to solve *your* floor covering problems.

mage earpets



"The Mill of 3000 Dinner Pails." The Magee Carpet Company, Mills: Bloomsburg, Pennsylvania, Sales Offices: New York, Chicago, Boston and San Francisco



Save up to \$100 per door with Fenestra's

New Fen-Air Louvered School Door

Custom quality at stock door prices with Fenestra Hollow Metal Door-Frame-Hardware Units

Here's a handsome louvered metal door designed for modern schools. It gives complete classroom privacy, plus free air circulation to corridors. The perfect door for air-conditioning and forced warmair heating systems!

Like all Fenestra Doors, the Fen-Air is also designed to save you money—as much as \$100 per door, installed, compared with custom-built louvered doors. Here's why!

First, Fenestra Doors cost less because they are mass-produced to custom-quality specifications.

Next, they cost less to install because the door and frame are pre-fitted and machined for all template and surface-mounted hardware. One man with a screw driver can install it in minutes! You never have

to cut, fit, mortise, drill or tap a Fenestra Door.

Finally, you save on maintenance year after year because Fenestra Doors can't warp, swell, stick or splinter. They always swing open smoothly and close quietly.

Fen-Air Doors feature the New Fenestra Lock-Miter Joint rolled steel frame, Bonderized, with a baked-on prime-paint coat. High-quality Fenestra hardware and accessories complete the package.

The door illustrated above is glazed with a combination of patterned and clear glass designed especially for school classrooms. The horizontal bars may be removed for installation of a single pane of glass if desired.

Before you choose the doors for your new school building, be sure to call your local Fenestra Representative—listed in the Yellow Pages—for complete information and prices on Fenestra Fen-Air Louvered Door-Frame-Hardware Units or mail the coupon below.



HOLLOW METAL DOOR-FRAME-HARDWARE UNITS

YOUR SINGLE SOURCE OF SUPPLY FOR DOORS . WINDOWS . BUILDING PANELS

~	
Tenestra Incorporated	
AR-10 2252 East Grand Boulevard, Detroit 1	1, Michigan
Please send me complete information on the Fen-Air Louvered Door for Schoolrooms.	New Fenest
Name	
School	
Address	

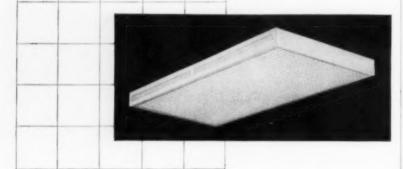
ONE FIXTURE:

8 sq. feet

of



unobstructed



NEW electro silv-a-king surf-a-lite

Our new Surf-A-Lite achieves a uniform luminosity over its entire 2 ft. x 4 ft. surface—free of visible metal bands and dark islands. The entire fixture presents a smooth appearance with no visible screws or latches when the "Magic Frame" door is closed.

Through the use of various diffusing media the desired comfort ratio can be obtained for any installation. And when used with our exclusive ½" sq. "Poly Cube" polystyrene louver it achieves a glowing, jewel like appearance which you will find adds to the beauty of the most luxurious interior.

SHALLOW $3\frac{1}{2}$ " FIXTURE mounts flush to ceiling ... modular design for unlimited variety of lighting patterns.

Available in two and four lamp units, 12", 17", or 24" wide—4-ft. or 8-ft. long...in ½" sq. "Poly-Cube" polystyrene louver, pattern #70 low brightness lens panel or Alba Glass diffusers with metal or plastic sides.

Complete specification and installation data available upon request.



electro silv-a-king corporation

1535 S. Paulina Street, Chicago 8, III. Spruce and Water Sts., Reading, Pa.

DESIGNERS AND MANUFACTURERS OF THE FINEST IN LIGHTING

PRODUCT REPORTS

Multi-colored Plastic Panel

Strypanel is a striated plastic wall panel which is available in 12 monochromatic and analogous color combinations. Made of tough, high-impact styrene, the panels are 1 by 8 ft in size and have a line of matching corner and mold trims. It is said that they will not chip, buckle, crack or craze. Cermak Tile Co., Inc., 4901 Brookpark Rd., Cleveland 29, Ohio.



Book-Shelf Freezer

A new "book-shelf" freezer which stores and displays its contents like books on a shelf is said to hold as much food as a chest freezer of the same size but to put twice as much of the food within easy reach. It has a capacity of 18 cu ft, is $30\frac{1}{2}$ in. wide and occupies only half the floor space required for a chest of the same capacity. Comes in the GE "Mix-or-Match" colors and white. General Electric, Appliance Park, Louisville, Ky.



Circular Calculating Device

The Controller is an automatic calculating device said to give the performance of a 10-in. slide rule. Made of aluminum, it is 3 in. in diameter and weighs only 1 oz with case. The manufacturer claims that it will not wear, break, rust or be affected by climatic conditions. Silver Bells Ltd., 600 16th St., Oakland, Calif.

(More Products on page 312)



The Fox brothers, Robert (left) and Richard (center) talk with Richard A. Welter of the Bell Telephone Company of Pennsylvania, in front of the model home on the tract of Plymouth Meeting Park, their very successful new home project.

"Concealed telephone wiring is essential in livable homes"

-say Robert and Richard Fox of Fox-Bilt Homes, Inc., Plymouth Meeting Park, Pa.

"We build homes designed for maximum livability," says Robert Fox. "Concealed telephone wiring is a very important feature of that livability. Customers like the convenience of planned outlets in their homes."

"Also," adds brother Richard Fox, "concealed telephone wiring keeps the beauty of the rooms intact. Customers like that, too. Concealed wiring, telephone as well as electrical, helps us build homes we're proud to offer, and that customers are proud to live in and show to their friends."

Robert and Richard Fox have built many homes in the suburbs of Philadelphia. And their houses sell rapidly in Philadelphia's competitive market. They feature proven products that customers can rely on. Among those products is concealed telephone wiring, which the Fox brothers, along with trend-minded builders across the country, consider a necessary sales feature.

Your nearest Bell Telephone business office will help with concealed wiring plans. Just ask for "Architects and Builders Service." For details on home telephone wiring, see Sweet's Light Construction File, 8i/Be., For commercial installations, Sweet's Architectural File, 32a/Be.

BELL TELEPHONE SYSTEM



Bildrite cuts costs



Architects for Dartmoor Motor Inn were Theodore H. Irion, A.I.A. and Leonard H. Reinke, A.I.A., of Oshkosh, Wisconsin.

Eye pleasing, harmonious and highly functional, the Dartmoor building is of shallow V design, belying its total length of 333 feet. Balcony and overhanging roof provide covered walkways at both levels. Four massive buttressed stairways allow guests to park close to all second-floor rooms,



on luxury motel



High atructural atrength and the excellent insulation value of Bildrite Sheathing are key points in sound engineering. Also, Bildrite cuts easily, saves saw blades, goes up fast, cuts waste almost to zero. It's the finest sheathing money can buy.

In Wisconsin's beautiful vacationland, the luckier travelers are those who know about Dartmoor Motor Inn, at Fond du Lac.

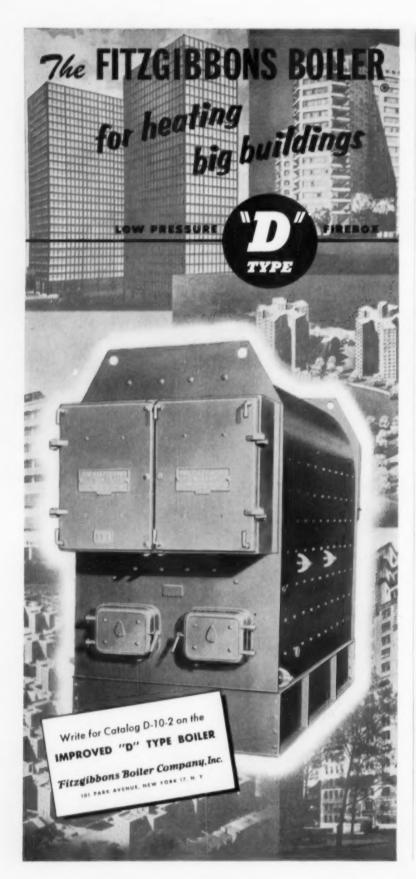
Here, owner J. Harold Bumby has invested \$300,000 to provide the utmost in comfort and luxury. Dartmoor has 32 units, with 8 equipped for housekeeping. There is easy access to rooms on both levels; telephone, TV and air conditioning in every unit.

On this job, as on most commercial buildings, good planning required speedy, economical construction; maximum frame strength; and highly efficient insulation. Accordingly, Dartmoor was built with 10,000 sq. ft, of Insulite's Bildrite Sheathing. The builder achieved important cost savings, and all performance factors required by the architects were fully met or exceeded.

Want a complete architectural file on Bildrite? Write Insulite, Minneapolis 2, Minnesota.

build better and save with INSULITE





PRODUCT REPORTS

Porcelain Enamel Siding

Special V-Corr, a new thin-coat porcelain enamel roofing and siding material, is especially designed for use in industrial areas where fumes and chemicals result in deterioration of uncoated building materials. A modified version of heavier coated V-Corr (now Premium V-Corr), it is made in a permanent blue-black finish, requires no painting and is said to be completely weatherresistant. Available in sheets 27½ in. wide by 5 to 12 ft long, it is made of 20-gauge steel with 2½-in. corrugations. Toledo Porcelain Enamel Products Corp., 2275 Smead St., Toledo, Ohio.



Sliding Panel Finger Pull

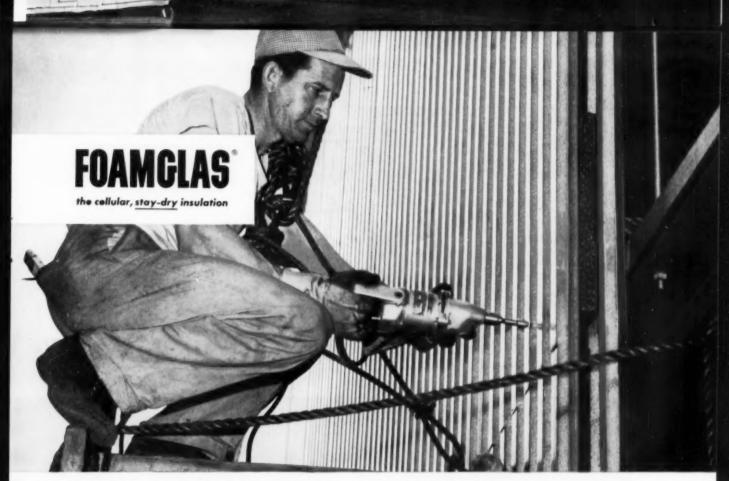
A finger pull for ¼-in.-thick sliding panels of glass, hardboard or plastic is made of extruded aluminum in anodized satin finish. It is 2¾ in. long with beveled ends or may be had in stock 6-ft lengths and cut to size. The Engineered Products Co., 129 Smith St., Flint, Mich.



Heating-Cooling Cabinet Unit

Newport Air Conditioners are housed in a single gray-green furniture steel cabinet and installed in a sleeve which extends through the wall. Shown above installed in a space formerly occupied by a cast iron radiator, the unit connects to the steam or forced hot water system for heating. A self-contained, air-cooled, hermetic refrigeration cycle provides cooling and dehumidification. Available in ¾- and 1-hp models. Warren Webster & Co., Camden 5, N. J.

(More Products on page 316)



Duquesne Brewing's 31/6" thick curtain wall was erected at job site. Ribbed aluminum back-up sheet was placed against supporting members and secured with drive screws. FOAMGLAS blocks were placed against back-up sheet and temporarily secured with adhesive. Ribbed

aluminum facing sheet was then set in place and secured with self-tapping screws on 8" centers driven completely through facing sheet, FOAMGLAS and back-up sheet. Drilling through the FOAMGLAS did not impair its inherent moisture resistance.

At Duquesne Brewing Company's new bottling plant...

This FOAMGLAS insulated aluminum curtain wall went up fast—cost only \$1.31 per square foot!

This ribbed aluminum curtain wall "sandwich"—insulated with a core of strong, moisture-proof FOAMGLAS—was erected faster than conventional walls at a cost of just \$1.31 per square foot. The Duquesne Brewing Company of Pittsburgh, Pa., used it to build a new bottling plant designed and engineered by Peth and Reed, Pittsburgh.

Selection of FOAMGLAS as the core insulation was doubly important. First,

its unusual strength, dimensional stability and rigidity helped make stronger wall panels—eliminated possible sagging or buckling after installation.

Most important, however, was the FOAMGLAS structure of minute glass cells, each a dead air insulating unit permanently sealed against moisture. Duquesne faced a possible condensation problem in the bottling plant walls. To solve it, the aluminum siding's ribs were

designed to serve as small "chimneys" for condensation drainage. That meant moisture would drain across the surface of the core insulation. Only FOAM-GLAS, being inherently moisture-proof, could serve under these conditions . . . and could be counted on for a constant insulation value for the life of the building.

Whatever your insulating problem, it will pay you to rely on FOAMGLAS for dependable, long-life insulating service. It's moisture-proof . . inorganic . . . incombustible . . . dimensionally stable . . . strong and rigid . . light in weight . . . acid-proof . . . vermin-proof. Prove these properties to yourself with six simple tests easily performed in your own office. Send for a FOAMGLAS sample and complete testing directions today. Address . . .



Future enlargement of the Duquesne Brewing bottling plant can be accomplished economically with aluminum-FOAMGLAS curtain wall. Existing wall can be removed, additional structural members erected and dismantled wall sections re-used to enclose expanded area.

Pittsburgh Corning Corporation

Dept. B-106, One Gateway Center Pittsburgh 22, Pennsylvania In Canada: 57 Bloor St. W., Toronto, Ontario

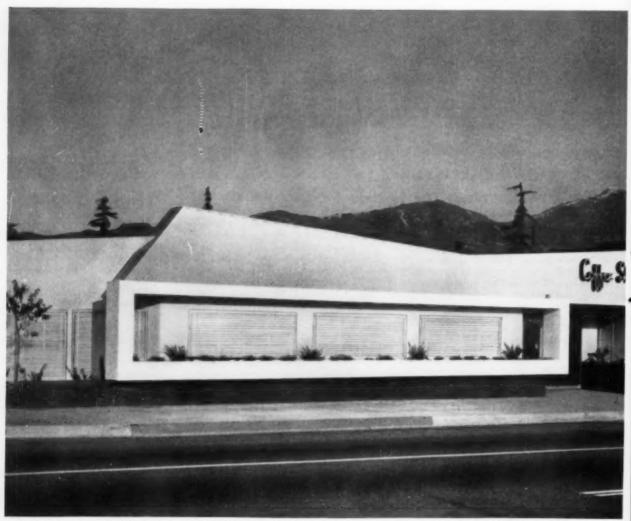


also manufacturers of PC Glass Blooks



Comfort story of a modern restaurant

Honeywell Electronics makes operation of small-



Bob's No. 3 Restaurant, Glendale, Calif. Architect: S. David Underwood, A.I.A. Designer and contractor: Don C. Glenn Heating & Air Conditioning Co.

Attractive, modern—Bob's No. 3 Restaurant typifies the kind of short-occupancy space where the accuracy and fast response of Honeywell Electronic Temperature Control are ideal for keeping comfort constant. Here are other major advantages of the installation:

... automatic change-over from heating to ventilation to cooling, without attention.

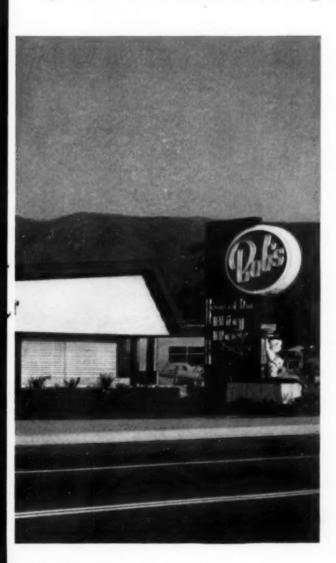
... outdoor thermostal automatically adjusts indoor temperature according to the weather, winter and summer. Permits ideal comfort in mild weather, prevents unpleasant indoor chilling in hot weather.

... electronic control panel, conveniently located, gives restaurant manager full control of temperatures and avoids tampering.

... automatic use of outside air for cooling whenever conditions permit lowers cost of mechanical refrigeration and gives free cooling during mild weather, or occasional unseasonably winter warm spells,



system air conditioning fully automatic



Now smaller jobs can have big-system flexibility, convenience, operating efficiency at reasonable cost—with Honeywell Electronic Temperature Control

IN SMALL air conditioning systems, as in the largest, good control is essential to good performance.

Good control means fully *automatic* control—until recently limited mostly to systems in larger buildings. The small job simply couldn't justify the expense of a completely automatic conventional control installation.

That's no longer true, thanks to Honeywell Electronic Temperature Control. Now it's possible for buildings like this smart new restaurant in Glendale, Calif., to have the best control—and therefore ideal air conditioning performance—at a sensible price.

Honeywell Electronics gives the restaurant management the convenience, economy and comfort of a fully automatic, year-round heating and cooling plant. The features that make such benefits possible are explained in the picture caption above.

There are many ways Honeywell Electronics can help you give your clients unprecedented advantages—in heating, ventilating, air conditioning and industrial control, in any building, new or existing.

Call your Honeywell office for the new booklet that tells more fully how to apply electronics to your clients' control problems—and for information on the economical Honeywell Periodic Maintenance Plan. Or write Honeywell, Dept. AR-10-151, Minneapolis 8, Minn.

Honeywell

Electronic Controls



112 offices across the nation



ONLY HUSSEY
ROLL-OUT Gym Seats
Have "All Closed" Decks

RIVER GROVE, ILL. HIGH SCHOOL

Hussey 5 tier
348 seat installation
with end rail
end panel
and scorer's table

When you specify Hussey space-saving Roll-Outs, you give your client advantages found in no other gym seats.

Their exclusive all-closed deck construction means they can be closed immediately. There is no need for sweeping first because no litter accumulates under the stand, articles accidentally dropped are easily recovered.

Hussey Roll-Outs are far safer than any other known design—the safety engineers of a nationally known insurance company stated that any insurance carrier of Public Liability Insurance would be justified in extending a LOWER over-all RATE on Hussey Roll-Outs.

They are the result of years of research and are engineered by seating experts. They open and close with exceptional ease, are truly comfortable and fit flat against the wall when closed.

Hussey Roll-Outs are also available in movable sections that can be used in any part of the auditorium.

On your next school or auditorium job use Hussey "Specs"—you can depend on them. Hussey seating engineers are at your service without cost or obligation.

For Further Information Phone Collect

SEE SWEET'S CATALOG 23J FOR "SPECS"

IRONWORKERS



SINCE 1835

HUSSEY MFG. CO., INC.

567 RAILROAD AVENUE

NORTH BERWICK, MAINE

Other Hussey Products: Partable and Permanent Steel Grandstands and Stadiums - Steel Landing Piers - Swimming Floats - Diving Boards

PRODUCT REPORTS

Masonry Coating

Damp-Seal is a new poly resin emulsion paint for sealing and protecting concrete blocks and other masonry surfaces against water erosion and moisture. It is claimed to be alkali-resistant and can be applied over damp surfaces. Two grades are offered: Type 1 for use on surfaces of average porosity and Type 2 for completely sealing in one coat the most porous and pitted concrete or block. Both are available in 11 colors. The Monroe Co., Inc., 10703 Quebec Ave., Cleveland 6, Ohio.



Classroom Sink-Fountain

The Carllon combination sink and drinking fountain provides multi-purpose uses for classrooms and school laboratories. This ledge-type, deck-mounted model is available in a full range of sizes in either 18- or 20-gauge chrome-nickel stainless steel. Carrollton Mfg Co., Sink Div., Carrolltown, Ohio.



Glass Radiant Heating Unit

A 2000-watt glass radiant heating unit is said to be the first of such high heat output and to be competitive in cost with any other heating method. Two models are available: the HW-20 and the HWT-20, which has a thermostat. Both measure 26½ by 22½ by 2½ by 2¾6 in. No junction box is required, as knockouts are on the back and bottom for direct cable or conduit connection. Berko Electric Mfg. Corp., 212-40 Jamaica Ave., Queens Village 28, N. Y.

(More Products on page 320)



There is a brand new THREE-PURPOSE POLICY*...

especially designed for the professional man—to meet (1) his business needs;

(2) his family needs; and (3) his retirement needs.

- Exceptionally low premium rates based on \$15,000 minimum to provide low-cost protection: \$18.51 per \$1000 issued at age 25; \$25.04 at age 35; \$35.63 at age 45.
- 2. High early cash values . . . Available at end of first year to provide collateral for business and emergency needs.
- 3. Valuable change of plan provisions for building additional retirement benefits permitting later change from one plan to another at a considerable saving in money no evidence of insurability required.
- 4. Women's rates are three years lower† than rates for men due to favorable mortality experience. For example, premium for a woman age 38 is exactly the same as for a man age 35.
- National Life's liberal dividend schedule and high cash values provide low net-cost over a period of years.

 This new plan has been approved by 44 states and the District of Columbia and is currently being reviewed by Mass., N. J., Md., Kan.
 † Nos available for women in Texas

NATIONAL LIFE INSURANCE COMPANY Montpelier, VERMONT

Kindly send me full information about your new plan of life insurance for the architectural profession available in minimum amounts of \$15,000 at low premium rates.

Keyhead

This 4-hour construction saves weight, saves space and saves money. Size of steel column: 10" x 10" x 49 lb. per ft. Floor area of fireproof column: 14" x 14". Weight of fireproofing per ft. of height: 35.8 lb. From coast to coast, the economy of this type of construction is being constantly demonstrated.

passes 4 hour fire test

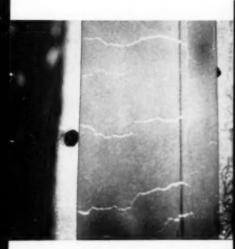
Vermiculite Tests of Column Fireproofing Show How To Save Weight, Money and Space

Steel columns pass a 4-hour fire test when they are protected with only 1¾ in. of vermiculite plaster, new fire tests reveal. These tests were sponsored by the Vermiculite Institute and were carried out at the Underwriters Laboratories. In another test, a similar column passed a 3-hour fire test with 1¾" of Vermiculite plaster.

In these tests, Keybead was used on corners. First, the scratch coat was applied to the plaster base. Then, Keybead was stapled to the scratch coat.

Quick and easy to apply. Straight and true from end to end. Open mesh of Keybead provides full, solid plaster corners when brown coat is applied.

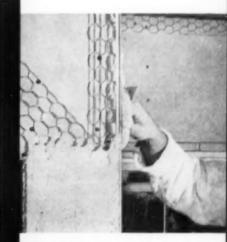
Architects, contractors and plastering contractors already have discovered the advantages that Keybead gives with regular construction. Now you can specify and use it with absolute confidence wherever firesafety demands the best.



View of test column in furnace near end of test, during which temperature reached 2,000 degrees F. Note absence of cracks along the Keybead.



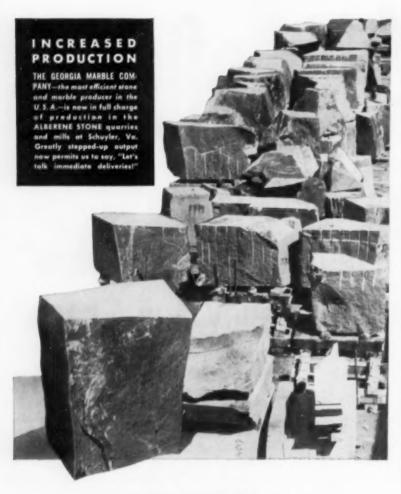
No special cutting and fitting of Keybead is required. Straight from end to end, it is easy to get precision corners. Just staple it to the scratch coat.



See how easily the plaster flows through the mesh. That's why you can be sure of strong, solid plaster corners with Keybead.

KEYSTONE STEEL & WIRE COMPANY · Peoria 7, Illinois

Keymesh * Keycorner • Keybead • Key-Z-Bead • Keystone Nails • Keystone Tie Wire • Keystone Welded Wire Fabric • Keystone Non-Climbable and Ornamental Fence



Immediate Deliveries!

Alberene Stone can be shipped normally in 90 days—or even sooner to meet very special circumstances. We can schedule our deliveries to meet all reasonable requirements of contractors and laboratory equipment manufacturers,

Further, the supply of Alberene Stone is inexhaustible. New veins are constantly being located in company owned quarries in Albermarle and Nelson Counties, Va.

Alberene Stone is the only natural silicate stone with the surface that goes all the way thru. It can be cut, drilled, tongue-and-grooved, refinished and reused almost indefinitely — while providing the best obtainable chemical resistance!

For information and technical assistance, address: Alberene Stone Corporation, 419 Fourth Avenue, New York 16, N. Y.

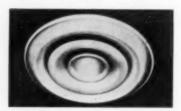
ALBERENE STONE

provides LOW ABSORBENCY protection

PRODUCT REPORTS

Heat Control Valve

The Valvatrol is a noiseless heat control which is said to incorporate a number of advantages over existing building heat and process steam control equipment. It features adjustable slow opening (up to 10 min or more) and fast and positive steam flow dead-end (5 sec or less), thus permitting the piping system to warm up in unison and so eliminating all operating noise. The unit is adaptable to all classes of heat and process piping and can be simply hooked up to existing thermostatic controls. The C. E. Squires Co., 18502 Syracuse Ave., Cleveland 10.



Ceiling Diffuser

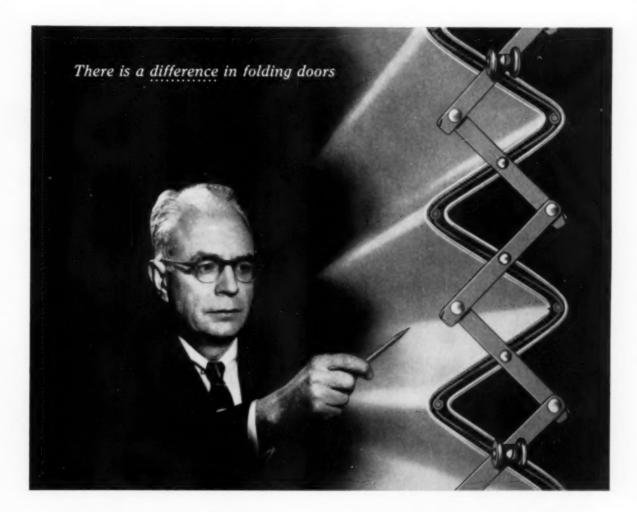
The Model T-1 three-cone ceiling diffuser features the same "curved contour cone" construction found on Titus four-cone ceiling diffusers. It is adjustable to two different air patterns simply by changing screws on the inner cone assembly. Available in all standard sizes for exposed duct or flush mounting. Tilus Mfg. Corp., Waterloo, Iowa.



Compact Kitchen Unit

The Dwyer 400 kitchen unit consists of a seamless one-piece sink and range top over a refrigerator and storage cabinet. The unit comes with a top which is raised when any of the elements is in use and is lowered at other times to serve as a table bar or counter. The unit is useful for closet kitchens, as shown above. Dwyer Products Corp., Michigan City, Ind.

(More Products on page 324)



End view: Foldoor - end result: better looks

In terms of owner satisfaction, appearance of a folding door is fully as important as functional value. And here again, Foldor offers you an unmatched difference. Thanks to exclusive, Multi-V construction, Foldor fabric is always back-to-back. There are no "wind tunnels" to pocket air, cause billowing and distortion of fabric in operation. That's why Foldor holds its shape on the job, stays looking better longer. In addition, Multi-V construction provides deeper, cleaner volutes—neater, well-defined lines. And Foldor's range of available fabrics provides a galaxy of colors and textures to challenge any imagination. See for yourself the long-lasting beauty of Foldor on the job. Just ask your Foldor Distributor, listed under "Doors" in the yellow pages.

HOLCOMB & HOKE MANUFACTURING COMPANY, INC. 1545 Van Buren Street, Indianapolis

In Canada: FOLDOOR OF CANADA, Montreal 26, Quebec Installing Distributors in All Principal Cities

ONLY FOLDOOR IS DIFFERENT AND BETTER THESE SIX WAYS

 Easier operating 2. Neater installation 3. Better appearance 4. Greater space-saving 5. Structural durability 6. Long life in actual service.



Gentlemer				
	nd free cop	y of new	1956 A	.I.A.
NAME				
FIRM				
ADDRESS				

For 35 Years...

Architects have



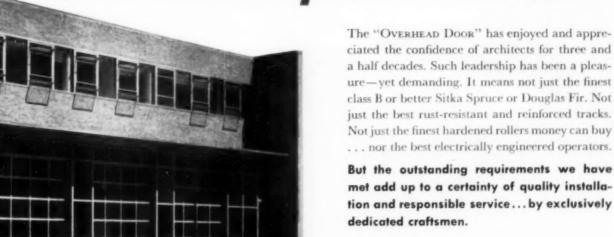


NEW Sweet's Catalog insert with separate spreads for each door...complete specifications on each spread...traceable details drawn to scale.

specified



more than any other brand!



 New fire station at Toledo shows how the Overhead Door Corporation handles most rugged physical and design requirements. Architects: Bellman, Gillett & Richards.

A Complete Line of Doors...Commercial and Residential...Including Electric and Electronic Operators.

America's pioneer and leader in upward-acting garage doors

OVERHEAD DOOR CORPORATION

Hartford City, Indiana

MANUFACTURING DIVISIONS

Hillside, N. J. . Nashua, N. H. . Cortland, N. Y. . Lewistown, Pa. . Oklahoma City, Okla. . Dallas, Tex. . Portland, Ore.

PRODUCT REPORTS

Fire-retardant Coating

A new resinous compound developed primarily as a fire- and heat-retardant coating for metal structural supports such as beams, posts, stanchions, etc.. is said to insulate metal surfaces against reaching 1000 F for 30 min while being subjected to a 2000 F flame. It is a heavy-bodied black mastic which can be sprayed or troweled to a thickness of ½ to ½ in. on metal, wood, fiber-board and other materials. It will not,

according to the manufacturer, run, drip, drop off or contribute fuel to the flame. The mastic serves also as an interior or exterior coating to insulate, reduce condensation, rustproof and waterproof in the range of -20 to 250 F. Insulmantic Corp. of America, Dept. A-3, 7750 West 61st Pl., Summit, Ill.

Colored Incandescent Lights

Three Beauly Tone pastel-tinted light bulbs have been selected for production after an extensive testing program of more than a hundred different tints on various fabrics, complexions, surfaces, floor coverings and woods. Beauty Tone pink flatters reds, red-yellows and browns; Beauty Tone Aqua flatters blues and blue-greens; and Beauty Tone Candlelight flatters yellows, yellow-reds and yellow-greens. All are said to produce a soft overtone in any decorative scheme. Westinghouse Electric Corp., Lamp Div., Bloomfield, N. J.



Built-in Refrigerator-Freezer

A new built-in refrigerator-freezer is of one-piece construction which requires no supports or braces since it is provided with a supporting frame which automatically assures proper height and spacing for ventilation. A two-control system allows the refrigerator to be shut off while the freezer continues to operate. Total capacity of the combination is nearly 13 cu ft. Preway Inc., Wisconsin Rapids, Wis.



Wall-hung Lavatory

Pinehurst wall-hung, formed steel lavatory is said to be ideal for second bathrooms and powder rooms. It measures 20 by 18 in. and features a generous shelf back and a front overflow. The bearing surface against the wall is extra generous, providing more horizontal thrust against the wall to give greater strength and rigidity. The Pinehurst comes in five colors and white. Eljer Co., 3 Galeway Center, Pillsburgh 22, Pa. (More Products on page 328)



INTELLIGIBILITY and Coverage are what count in public address systems. Power alone won't do the job.

Here's how Electro-Voice CDP's reach more people more clearly: Using a principle developed in the creation of America's finest high-fidelity speakers, two coaxially-mounted diffraction horns work from opposite sides of a single diaphragm over a polar pattern of more than 120° without pinpointing effect.

Conventional P.A. horns may beam sound volume further, but loudness

—and intelligibility—decreases by 50% just 25 degrees off axis. CDP speakers spread the sound evenly and clearly. Speech is completely intelligible both off axis and on axis (see sketch). Conventional speakers have limited response above 4,000 cps. Yet a range of response to 7,000 cps is required for perception of full articulation. CDP speakers give you 2½ more octaves of sound reproduction in the middle and high ranges and have a frequency response to 10,000 cps—the level required for best reproduction of music.

CDP CDP

A. This is a garden hose throwing a hard, straight beam, like a conventional P.A. horn. See how it concentrates power but sacrifices coverage.

TO REACH MORE PEOPLE MORE CLEARLY, SPECIFY ELECTRO-VOICE CDP SPEAKERS.

B. This is a garden hase with a spray nazzie, covering a broad area completely, like an Electra-Voice CDP speaker. See how much more efficient the CDP pattern is. CDP speakers are weather-proof, blastproof and splash-proof, virtually indesstructible. They're molded of fiberglass for better acoustical properties and entre strength.

COMPANY
ADDRESS
CITY ZONE STATE

Mail this coupon for Bulletin 195 Electro-Voice, Inc., Dept. AR610 Buchanan, Michigan

ELECTRO-VOICE, INC.
BUCHANAN, MICHIGAN
Export 13 East 40th Street, New York 16, U.S.A.
Cables, ASS AB

Easy cure for "look-alike" houses ... CURTIS window variety



EXTRA DISTINCTION AT MODEST COST is achieved with Curtis Silentite Convertible wood windowsshown here used as awning sash with picture window. Used upright, these versatile windows serve as efficient

casements, too. Curtis Convertibles can be stacked both in width and height into weather-tight multiple units, easy to install. More than 1000 combinations possible - giving you almost unlimited scope in planning.



DOUBLE-HUNGS CAN BE DIFFERENT when used in groups or in combination with a picture window. Curtis Silentite double-hung wood window units are available in several sash styles-all extremely weather-tight to cut heating and air conditioning costs. Note the Curtis bow window at the far right--made up of standard Curtis casement units.



CASEMENTS ADD AN EXTRA NOTE OF STYLE—especially when they are Curtis Silentite casements, available in several different styles for any home, any room. These casements are really weather-tight-they can save up to 16% of heating or air conditioning costs. A patented operator holds the casement rigidly in any position - no swinging.



Curtis Silentite windows come in many different styles and are available from lumber and woodwork dealers in most parts of the country. Complete information and specifications for these guaranteed windows are yours on request—mail the coupon.

Curtis Companies Service Bureau 200 Curtis Building, Clinton, Iowa

Please send me the new Curtis window idea

Name

Address

URTIS

WOODWORK . heart of the home

REYNOLDS ALUMINUM

National Bank of Commerce, San Antonio

Architect: Kenneth Franzheim, F.A.I.A., Houston

Associate Architects: Atlee B. and Robert M. Ayres, San Antonio

General Contractor: The Henry C. Beck Company, Dallas

Reynolds Aluminum Applications in this Building:

Reynolds Series 100 Vertically Pivoted Windows





See Reynolds great new series, "CIRCUS BOY", Sundays, NBC-TV Network

REYNOLDS

IN MODERN ARCHITECTURE



Exchange Bank & Trust Company Office Building, Dallas, Texas

Architects: Lane, Gamble and Associates, Dallas

General Contractor: Robert E. McKee General Contractor, Inc., Dallas

Curtain Wall Fabricator: The Browne Window Manufacturing Company, Inc., Dallas

Reynolds Aluminum Applications: Aluminum Extrusions for Sun Shades

First National Bank of McAllen, Texas

Architects: MacKie and Kamrath, A.I.A. Houston

> Associate Architects: Lloyd Borget and Kenneth Bentsen.

General Contractor: M. R. Nelson Company, McAllen

Integrated Wall System Fabricator-Erector: Texlite, Inc., Dallas

> Reynolds Aluminum Applications: Extrusions for Wall Framing System



REYNOLDS ALUMINUM SERVICE TO ARCHITECTS

Reynolds Architect Service Representatives offer specialized assistance on aluminum design problems, on applications of standard aluminum mill products, and on the use of commercially fabricated aluminum building products. They can help to coordinate varied aluminum requirements for procurement efficiency and economy. Inquiries should be addressed to... Architect Service, Reynolds Metals Company, Louisville 1, Kentucky.

ALUMINUM

PRODUCT REPORTS

Concrete Block Facing

Vilricon is a cold-glazed cement mixture which is sprayed on the face of a concrete block and becomes an integral part of the block without bonding, baking or pressure casting. It requires a series of applications, including several water spray applications to retard curing of the cementitious mixture. The finished surface resembles mottled tile to some extent. It is said to have physical properties approximately equal to high-

strength cement. Vilricon, Inc., Long Island City, N. Y.

Closed-circuit TV Camera

The Model TVC-I Observer consists of a closed-circuit TV camera complete with lens and control generator. Even with lighting on the scene as low as 10 ft-candles, it is said to produce pictures equal in clarity and detail to "broadcast" quality. Any standard TV or video monitor can receive the picture. Blander-Tongue Laboratories, Westfield, N. J.

One-piece Masonry Anchor

The Pin-Grip masonry anchor is recommended for securing pipe clamps, electrical fixtures, furring strip, insulation board, wood panels, metal signs, awning frames, etc. to any kind of masonry. A stainless steel pin nested in a bored aluminum body is driven into a hole bored in the masonry and forces out four expanding prongs which grip the wall. A wide range of sizes is available. Star Expansion, 142 Liberty St., New York 6.



Wall Jack

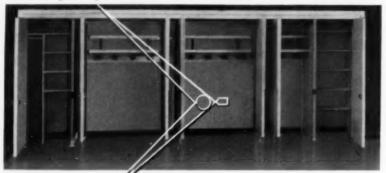
A wall jack for use in lifting "tiltup" walls does not strain or twist
walls and is said to lift even heavy
plasterboard walls without pulling nails
or harming the construction in any way.
It is claimed that two workmen can lift
a 2000-lb wall to perpendicular without
effort, as shown in the photograph
above. The jack weighs only 30 lb but
is constructed of tubular steel for maximum strength. Proctor Products Co.,
16202 Sixth Are. N.E., Seattle 55, Wash.

Automatic Washer-Dryer

A newly designed Filter-Flo automatic washer and matching clothes dryer features fingertip selector controls for two wash speeds and two spin speeds for all types of fabrics and a high-speed drying system. Both are available in the GE Mix-or-Match colors or white. General Electric, Home Laundry Dept., Louisville, Ky.

(More Products on page 332)

when you plan classroom wardrobes remember



the extra dimensions of quality in



Emco has extra "dimensions" that make it the outstanding wardrobe in the classroom field

Quality appearance is the first thing you notice in an EMCO Wardrobe. But there are more extra "dimensions" to EMCO than its good looks.

EMCO is designed to serve the needs of teacher and children in every conceivable way. The receding doors are safe ... easy to operate by the smallest child ... there are no dangerous overhead weights ... doors latch open without pinching hands ... there are no obstacles in the recess.

Next, consider EMCO's hook arrangement. It encourages neat garment storage and combined with EMCO interior venting allows for proper ventilation of wraps.

Finally, EMCO's guaranteed installation by factory trained men is the one measure of quality no other wardrobe dares to match.

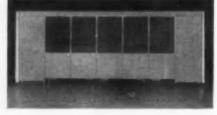
So remember the Extra Dimensions - Specify - then insist on EMCO.

FREE Brochure. Send us your name and address. We'll mail you our catalog and name of nearest EMCO representative. No obligation, of course.

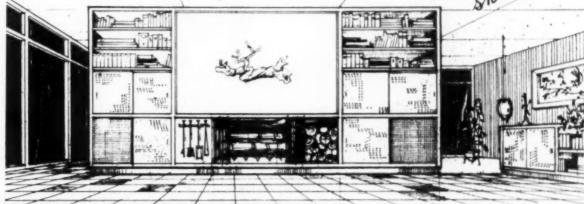
EQUIPMENT

Manufacturing Co., Inc.

1400 Spruce Street
Dept. AR, Kansas City, Missouri



Notes from itects an architects ok



PROJECT NO. \$607 -4 BY

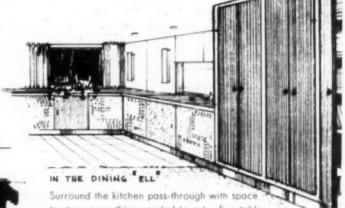
"INTEGRATED STORAGE"

EASY TO PLAN WITH

MASONITE® PANEL PRODUCTS

THE FAMILY ROOM

A pleasing combination of textured, grooved and Peg-Board® panels adds so much to the charm of the capacious storage wall. Masonite offers a welcome variety of grainless panels for both above- and below-grade installations.



to store everything needed to set a fine table. Masonite panels can be selected and finished to carry out 'most any theme.

OUTDOOR STORAGE

Neat, accessible and an asset to appearance. An integral part of the elevation is this storage wall for lawn and garden tools, play equipment and such. Masonite exterior panels defy the weather!

Here are three practical answers to every home owner's plea for more storage space—thanks to the variety and adaptability of Masonite's panel products. Choose among 44 types, textures and thicknesses. See Sweet's A.I.A. file No. 23-L or send the coupon.



MASONITE CORPORATION Dept. AR-10, Box 777, Chicago 90, III.	
In Canada: Masonite Corporation, Gatineau, Q	
Please send me copy of your "Guide for Archite	acts.
Nome	
Firm.,	
Tatle,	
Address .	
City State	
Zone County	

THE PREFERRED PLUMBING

CRANE INTRODUCES A NEW VERSION OF THE T-TYPE BATHROOM

FEATURED IN LIFE MAGAZINE



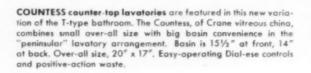
Here's a new and interesting variation of the popular T-type bathroom as featured in Crane's current advertisement in *Life*.

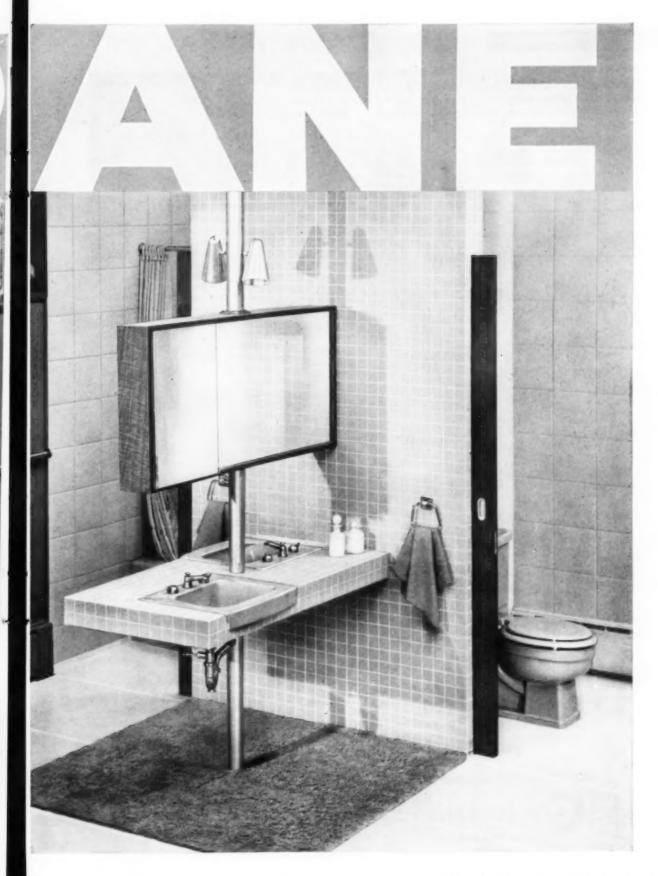
The new series of Crane advertisements in *Life* will contain many imaginative bathroom ideas for you and your clients—and will point up basic information on plumbing that your clients should know.

For example—your clients will learn that Crane quality means longer life of fixtures, controls and fittings...less maintenance, too. That Crane styling by Henry Dreyfuss is years ahead. That the seven Crane colors blend interestingly with any decorating scheme.

Here's how you'll benefit from Crane's *Life* advertising. When your clients see Crane in your specifications, they'll know you are putting the very best into their homes without increasing construction costs. And isn't that what they expect from you?

CRANE CO. General Offices: 836 South Michigan Avenue, Chicago 5
VALVES • FITTINGS • PIPE • KITCHENS • PLUMBING • HEATING





PRODUCT REPORTS

Chalkboard

Conolite chalkboard is said to combine the advantages of a perfect chalkboard writing surface with the abrasion resistance, ease of application and stain resistance of Conolite polyester laminate. It is said to resist common chemical products and to have good washability for red, black and yellow wax crayons and ball point pen marks. It is made in 36-in,-wide rolls of 30-ft length and comes in standard green. Continental Can Co., 100 East 42nd St., New York 17.

Cross-bore Door Lock

SentryLock is an easily assembled crossbore lock designed for medium construction and residential fields. It can be used in any standard metal door cutout for Series 160. The minimum cross-bore diameter, however, is only 1½ in. The SentryLock can be used with any combination of knobs and roses. In all, 75 different designs are possible, including several of the large 5-in. backset type. Sargent & Co., New Haven



Automatic Washer-Dryer

The 1957 Kelvinator home laundry appliance line features automatic washers with the "Magic Minute," an automatic pre-treatment that eliminates hand-scrubbing and soaking for clothes with ground-in dirt. A "Do-All Dial" permits any operation to be stopped, skipped, repeated or extended on the washer and controls length of drying time from 5 to 120 min on the dryer. Kelvinator Div., American Motors Corp., Detroit 32, Mich.



Centrifugal Fan Ventilators

New Centriflow fan ventilators are available in a V-belt drive for large capacities from 675 to 36,430 cfm (left) and in a low profile model of spun aluminum for installations requiring lower capacities from 408 to 2508 cfm (right). The V-belt model comes in 13 basic sizes, three basic damper styles and motors ranging from ½ to 7½ hp. The direct drive comes in two basics, four damper types and motors ranging from ½ to ½ hp. The Burt Mfg. Co., Dept. AR, 11 E. South St., Akron 11, Ohio.

Decimal Equivalent Table

A reference aid for engineers and draftsmen has been produced in the form of a decimal equivalent table surprinted on Transeal, a pressure-sensitive drafting aid for drawings and tracings. Transeal is a thin, transparent plastic which readily accepts inking and which has an easy-to-remove waxed paper backing. It is used for eliminating repetitive drawing time in paper, vellum, and cloth. Johnson Research Corp., Bethpage, N. Y.

(More Products on page 336)





ALUMINUM BAR WINDOWS

for finest school construction

The lines of the Geyser system of fenestration have been kept trim and narrow to assure a light, open feeling while retaining the full structural strength necessary for both horizontal and vertical members.

Geyser windows can be built to heights up to 21'0" without horizontal structural supports, and to any width in multiples of 3'6" or 4'0".

WRITE today for engineering data or see us in Sweet's.



Ge

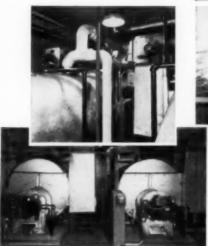
eyser company

915 McARDLE ROADWAY



ARCHITECTURAL RECORD OCTOBER 1956

Wing Draft Inducers Preserve Architectural Lines, Improve Draft and Save Money...





(Above) Stouffer's Restaurant, Wynnewood, Pa., one of a famous chain of quality restaurants. (Left) Detail of two scotch boilers at Stouffer's, each equipped with a Wing Draft Inducer,





(Left) Berwyn School, Berwyn, Pa. (Above) Wing Draft Inducer installed in heating boiler at Berwyn School.

Today it is unnecessary to mar modern, low, horizontal building lines with tall chimneys in order to provide boiler draft. Wing Draft Inducers, installed in boiler breechings, assure positive, adequate draft regardless of wind, weather or load variations. Yet, the only chimney necessary is a stub stack, just clearing the roof, for venting gases.

This means savings in original building costs and future stack maintenance expense. Furthermore, a big cut is made in fuel costs because of the complete combustion you get with Wing Draft Inducers.

Write for Bulletin I-51 for complete details.

L. J. Wing Mfg. Co. 151 Vreeland Mills Rd., Linden, N.J. Factories: Linden, N.J. and Montreal, Canada





WING FRESH AIR SUPPLY HEATERS









L. J. Wing N	No.	ARI
	d Mills Rd., I	er Bulletin I-51.
Name		
Firm		
Address		
City	Zone	State



One of many interesting combinations of Andersen Casement Picture Window Units. Norman Johnson, A.I.A., Architect.

A lovely home with a lovely view, highlighted by the wood window beauty of Andersen WINDOWALLS. Always, specifying WINDOWALLS, you assure your clients a view with plenty of fresh air and sunshine... plus Andersen's weatherproof protection on windy, wet or wintry days.

For complete specification data on Andersen WINDOWALLS for homes you plan, see Sweet's or write Andersen for Detail Catalog and Tracing Detail Files.

How to design outdoor beauty into daily living!



For details and specification data see Sweet's Architectural File, Sec. 17cAn or Light Construction File, Sec. ScAn, pages 16 to 23.

Andersen Windowalls

ANDERSEN CORPORATION . BAYPORT, MINNESOTA



CASE STUDY HOUSE NO. 17, DESIGNED BY CRAIG ELLWOOD FOR THE MAGAZINE, ARTS & ARCHITECTURE, PHOTO BY JASON HAILEY, 506 S. SAN VICENTE, LOS ANGELES.

Terrazzo:

The one to grow on

Young homo supiens, nature's most charming and destructive invention, meets his match in Terrazzo, the floor of ageless vitality. Capable of withstanding the most fiendish attacks known to children, Terrazzo comes through with flying colors. It is easy to clean, hard to stain. It requires no refinishing, no painting, no costly repairs. Available also for walls, stairs and wainscots, Terrazzo offers infinite possibilities of design and color combinations. Specify Terrazzo and give your imagination free rein. For detailed information, write the Association in Washington, D. C. AIA Kit sent upon request. Catalogued in Sweet's.

THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION

404 Sheraton Building, 711 14th St., N.W.

Washington 5, D.C.

PRODUCT REPORTS

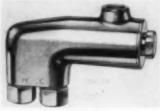
Electric Load Centers

A complete line of load centers, from 2 to 42 circuits, is available with the QO panelboard breaker. The QO's Swingrip mounting feature assures proper positioning of the breaker and a firm, positive connection in one simple operation. Flush, surface and raintight devices are available, lugs only, split bus or main breaker types. Devices for 2 to 8 circuits are available without doors, while 12, 20, 30 and 42 circuit devices are furnished with doors. Square D Co., 6060 Rivard St., Detroit 11.



Jalousie Windows and Doors

A new jalousie window and door line features tight, weatherstripped construction, with tension screens replaceable by storm sash. Completely assembled stock sizes are offered for kitchen windows, breezeways, porch enclosures, flanking units for picture windows and clerestory designs. Fleet of America, Inc., Buffalo, N. Y.



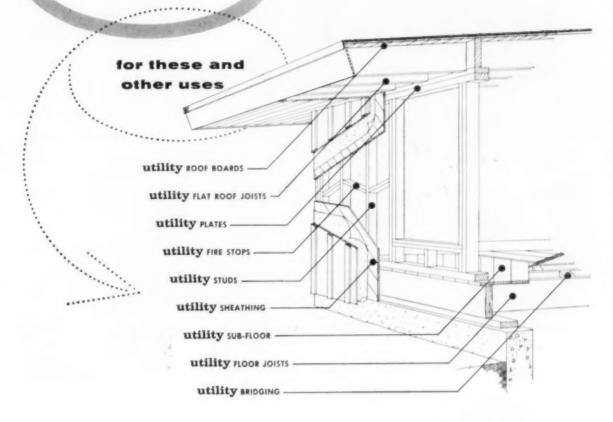
"Sweatproof" Bathroom Valve

A thermostatic valve that is said to eliminate water drippage to bathroom floors on hot, humid days is designated the K-9275. The completely automatic valve mixes water from the hot and cold supply lines, delivering tempered water to the closet tank and eliminating sweating. The valve can be installed in any part of the supply system. After installation, it needs no further adjustments for seasonal variations in water temperature. Kohler Co., Kohler, Wis.

(More Products on page 338)

SAVE CONSTRUCTION
COSTS by specifying...

utility grade LUMBER



Webster defines utility as: Quality or state of being useful. And that completely describes "Utility" grade West Coast lumber, strong, sturdy AND economical. It fills the bill in scores of construction job details where strength and dependability are required. The use of "Utility" lumber saves money.



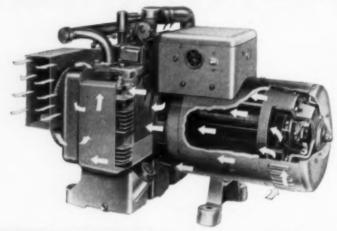
GET ACQUAINTED with the advantages of using "Utility" grade lumber by sending for new booklet, "Utility Is the Word for Lumber." Use coupon below.

WEST COAST LUMBER

Douglas Fir • West Coast Hemlock Western Red Cedar • Sitka Spruce

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					MBE S. W								5, 6	Dro	gan			4		
Please :	send	d ye	100	bool	let	Un	lity	ls:	he	Wor	d fo	e L	ymi	•	· fo	add	ires	s be	lo	or I
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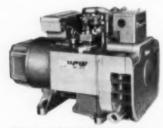
SIMPLIFIES INSTALLATIONS OF ONAN ELECTRIC PLANTS





VENTILATES INSTALLATION AREA

Vacu-Flo cooling takes air from the room, through the electric plant, and expels it outside through a single duct. Eliminates fumes; keeps room filled with fresh air.



DUCT CARRIES EXHAUST LINE

On the Ongn CW series of electric plants (7½ and 10KW), the exhaust pipe is carried through vent duct to the outside making only a single opening necessary.

Heated air expelled outside through single vent. Units can be enclosed or "buried"

Air-cooled Onan Electric Plants can now be installed in small, enclosed compartments; in isolated or underground rooms; or "buried" within a vehicle, far from the outside air. Previously impossible or difficult installations are now easy and practical with Onan Vacu-Flo cooling.

This exclusive system is a factoryequipped item, optional on any Onan air-cooled electric plant. A quiet-running, centrifugal blower in a specially-designed housing PULLS cooling air through the generator and over the engine . . . then EXPELS heated air through a duct to the outside.

The space required in a "buried" installation need be only a little larger than what the unit itself requires. Airintake and vent openings plus an exhaust line are all that are necessary.

On vehicles such as trailers, display vans, fire and rescue trucks, and concession wagons, Vacu-Flo cooling makes it possible to mount the Onan plant anywhere in the body where space is available. On pleasure and work boats, Vacu-Flo cooling makes below-deck installations of air-cooled electric plants practical . . . cooling efficiently and quickly eliminating fumes from the area.

Onan Electric Plants with Vacu-Flo cooling operate more quietly than blowercooled models . . . an important added advantage in many installations.

Write for Special Vacu-Flo folder.



D. W. ONAN & SONS INC.

2724 University Avenue Southeast, Minneapolis 14, Minnesota

PRODUCT REPORTS



Vertical Drafting Board

An "Easy Shift" vertical drafting board, designed "to reduce draftsman fatigue," is available in two models: one with a fixed board angle of 15 deg from the vertical, and the other adjustable through an arc of 85 deg from the vertical. Both models have an up-and-down adjustment of 20 in., permitting the draftsman to work seated or standing. Vertical adjustment is held by a footoperated lock mechanism. L.A.B. Corp., 1044 Onondaga St., Skanealeles, N. Y.



Hi FI Cabinet Sets

A new stereo sound system with a Concertone stereo recorder and Radio Craftsman dual tuners and amplifiers housed in a set of Herman Miller cabinets designed by George Nelson has been introduced by American Electronics, Inc., 655 West Washington Blvd., Los Angeles 15, Calif.

Plastic Countertops

Bolta-Top is a flexible plastic laminate that can be installed in a continuous sheet across counters, up the back wall or backsplash and down over the front edge. It consists of a sheet of vinyl plastic bonded to a fiber backing and covered with a layer of transparent (More Products on page 342)





Inexpensive Fuxury!

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DURABLE, ECONOMICAL, COLORFUL HAKO ASPHALT TILE is used wherever floor coverings are needed that must give downright durability combined with outstanding beauty. HAKO Asphalt Tile is the accepted floor covering in institutions and industrial buildings that demand economy and long wear . . . in commercial establishments and homes that demand color and design beauty. The color will not wear off and dirt will not wear in! The smooth sealed surface is permanent for the life of the floor . . . HAKO Asphalt Tile is plastic fortified . . . can be installed above, on, or below grade, and over radiant heated floors.

Write for details about modern HAKO Floor Tile, Box 986, Newburgh, New York.



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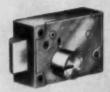
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FLOOR TILE in Vinylfiex, Poly-Krome, Parquetry, CorkAtile, Asphalt, Rubber, Vinyl, Cork. CORONET PLASTIC WALL TILE



















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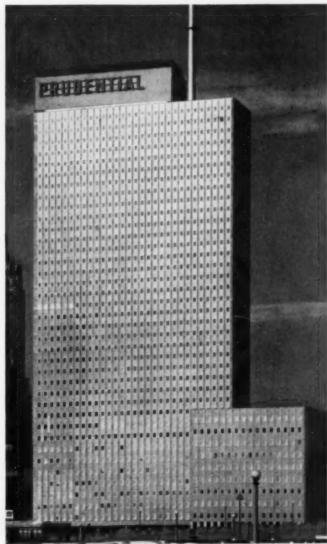


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MODERN! RIGHT DOWN TO THE REST ROOMS... ECONOMICAL, TOO, WITH FLOOR-FREE DESIGN



Naess & Murphy, Architect & Engineer

M. J. Corboy Corp., Plumbing Contractor

ZURN SYSTEM teamed with AMERICAN-STANDARD off-the-floor fixtures keynotes Prudential Building's modern rest room motif.

Completely unobstructed rest room floors add the final touch of modernity to Chicago's all-new Mid-America Home Office Building of the Prudential Insurance Company of America. Here, in more than 100 rest rooms, more than 1000 American-Standard plumbing fixtures are supported off-the-floor by the Zurn System to provide the ultra-new look and sparkling clean sanitation standards tenants and employees expect.

Zurn System Behind Scenes. Concealed behind the walls, the Zurn System provides rigid, permanent support for the superior American-Standard wall-type fixtures. Zurn drains, hydrants, Supremo Cleanouts and Greaseptors were installed to assure smooth functioning drainage control.

Most Economical, Too! Architects, engineers, contractors recognize the superior beauty and sanitation of floor-free design. But important too is its greater economy...that pays off again and again over the life of the building.

Installed Value. From a new skyscraper to a modernization job, this investment in better rest rooms will pay off for you too. How? With up to 30% demonstrated savings in cleaning time... easier maintenance...prevention of dirt and vermin...more rentable floor space... construction savings... good will of customers and employers...plus the modern look that stays "new" year after year.

Get The Complete Story on the proved benefits of the Zurn System and American-Standard off-the-floor fixtures. Write for your free copies of "You Can Build It For Less A New Way" and "Better Rest Room Guide."



THE ZURN SYSTEM®

J. A. ZURN MFG. DIV.

Zurn Industries, Inc.

Erie, Pa., U.S.A.



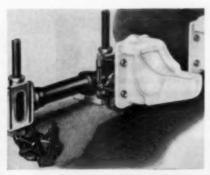
OFF-THE-FLOOR FIXTURES

American-Standard
Plumbing and Heating Division
New York 18, N. Y.

This advertisement is sponsored jointly by Zurn Industries, Inc. and the American-Standard Plumbing and Heating Division.



Better Looks, Eusier Cleaning. Modern rest rooms like these using the Zurn System and American-Standard off-the-floor fixtures, not only look better, but actually speed cleaning time up to 30% based on comparisons with old-style installations.



Saves Material, Time, Labor. Zurn System supports off-the-floor fixtures from behind wall... for a new world of better rest room design. Cuts installation and maintenance. No furring-in, floor reconstruction, unseen water seepage.



City_

Mail coupon for new literature. Describes benefits of floorfree rest room design. There's no obligation, of course.

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- 3. Experience. Waste King, pioneer and world's largest manufacturer of commercial garbage disposers.
- 4. National Service. Expert factory service agencies in all principal cities. No shut-down worries.

Various models grinding from 200 pounds to over 2,000 pounds per hour. Ask your dealer to estimate your volume and recommend Waste King models needed.

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3301 Fruitland Ave., Los Angeles 58, Calif.

ARRS-9 Models for Restaurants, Hotels, Hospitals, Schools and Institut

PRODUCT REPORTS

Mygen. Said to be impervious to alcohol, fruit acids and most staining agents. it is available in widths of 27 and 46 in. It comes in red, gray and green and in linen patterns of charcoal, gray, red, yellow, green and buff. Bolta Products Div., The General Tire & Rubber Co., Lawrence, Mass.



Incandescent Reflector

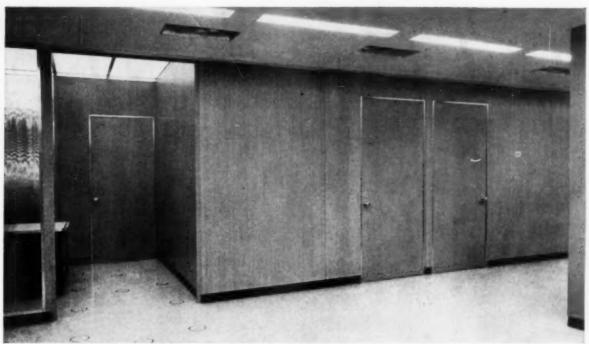
Standard Dome, Shallow Dome, Deep Bowl, Rectangular Type and Symmetrical Angle incandescent reflectors are now available finished in all-white porcelain with apertured neck. They are of one-piece steel construction, finished inside and outside with white porcelain enamel, which seals the fixture against rust and corrosion. Electro Silv-A-King Corp., 1535 S. Paulina St., Chicago 8.

Ceramic Bathroom Fixture

Regal Ring is a towel holder consisting of a brass ring suspended from a porcelain conch-like plaque. The plaque, accented with golden lines that follow the shell's curved serrations, comes in white, pink, black and gray. The brass ring is said to be rustproof. A powerful adhesive grips the unit to either tile, glass, plaster or wood. The Yale of Towne Mfg. Co., Ceramic Dept., 155 East 44th St., New York, N. Y.

Resilient Vinyl Floor Tiles

Metaltone vinyl floor tiles feature flakes of metallic color, including burnished copper, gold and silver, running through them. They are available either in solidcolor patterns or as a random sprinkling of metallic color against a background of black or white. The tiles are available in the standard 9-in. squares, 1/8 in. thick, but special sizes can be made to order. They are said to resist water, chemicals and abrasion. Robbins Floor Products, Inc., Tuscumbia, Ala.



Weldwood Stay-Strate ** Flush Doors—guaranteed for the life of the installation—match the panels in grain and color. Doors and panels have cores of Weldrok *-a mineral material that resists fire and heat . . . and reduces office noises.

6 Miles of Beautiful Movable Partitions for a Dynamic Organization!



Ford Motor Company chose Weldwood Korina. Korina is a beautiful blond wood that is remarkably uniform in grain and color. Weldwood Movable Partitions are stocked in birch and walnut—available in a wide range of imported and domestic hardwoods.

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Dynamic businesses grow and change. Their organizations must be flexible to meet new situations. That's one of the main reasons why Ford chose Weldwood Movable Partitions for its new Central Staff Office Building.

With Weldwood movable partitions, offices can be moved, expanded or rearranged overnight by regular maintenance crews. But that's not all. Weldwood partitions give offices the warmth, dignity, and beauty of fine wood. They create an atmosphere befitting America's business leaders.

Also, Weldwood Movable Partitions are easy to maintain. Occasional cleaning and waxing are the only maintenance needed. Paneling looks new indefinitely. For more information on Weldwood Partitions, send the coupon below.



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by design



PEORIA JOURNAL-STAR BUILDING, PEORIA, ILLINOIS

designed by
J. FLETCHER LANKTON—JOHN N. ZIEGELE
and Associates

built by
GEORGE D. JOHNSON COMPANY

Designed with a difference Peoria's new Journal-Star Building is the talk of the newspaper world.

For unlike most newspaper buildings it's located on a beautifully landscaped open-area site at the edge of the city overlooking Peoria Lake. And, free of heavy city traffic, the Rock Island Railroad is able to deliver newsprint right to its door.

Efficiency-planned throughout to keep the presses rolling faster . . . all composing and press rooms are specially designed to accommodate new types of conveyors and machinery. These rooms are spacious, light-conditioned and noise-proofed. Office areas are air-conditioned and have movable metal partitions for greater flexibility of use. A special floor conduit system also makes telephone locations completely flexible. A modern cafeteria is provided for the convenience of employees.

And . . . in keeping with their fresh new ideas in functional design . . . the architects specified Westinghouse Water Coolers.

EXACTLY THE RIGHT TYPE AND SIZE FOR EVERY NEED

Westinghouse Electric Corporation Electric Appliance Division Springfield 2, Massachusetts





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Gain fire protection as well as daylighting, by specifying Wascolite prefabricated units for your schools.

Wascolite Skydomes - for balanced daylighting of classrooms.

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Only Wasco offers a complete line of daylighting units plus fire protection, ventilation and access to roof.

Only Wasco offers fire venting engineering service. Write for information and catalog.



WASCO PRODUCTS, INC.

Bay State Road, Cambridge 38, Mass, WASCO CHEMICAL (CANADA), LTD., TORONTO, CANADA

OFFICE LITERATURE

(Continued from page 270)

Face Brick (AIA 3-F)

Full-color brochure features the new "high fashion" colors in precision face brick. 32 pp. The Stone Creek Brick Co., Stone Creek, Ohio.

Electric Heating Handbook

Engineering Bulletin 84 includes heat requirement calculations for electric heaters in different climates and constructions. 32 pp. Can Arm Corp., P. O. Box 156, Champlain, N. Y.

Invitation to Beauty

Describes Bolta-Floor, a fully homogeneous vinyl flooring for residential and commercial use. 4 pp. The General Tire & Rubber Co., Flooring Div., Akron 9, Ohio.*

Lehigh Furniture

Supplementary Catalog offers a comprehensive selection of conference tables and includes also chairs, desks, sofas, cabinets and accessories. 16 pp. Lehigh Furniture Corp., 16 East 53rd St., New York, N. Y.

Plugmold Electrified Baseboard

Form 590 tells the story of 2200 "3-in-1" Plugmold electrified baseboards for use where multiple electrical outlets and additional circuits are needed. 8 pp. The Wiremold Co., Harlford 10, Conn.

Electronic Air Cleaners

Catalog E-40 covers packaged electronic air cleaners, including engineering data and size and capacity tables for fitting the proper model to the job. 8 pp. Trion, Inc., 1000 Island Ave., McKees Rocks, Pa.*

How American Standards Are Made

Booklet describes the three ways standards become nationally accepted and approved. Explains what the ASA is and how it operates impartially for the manufacturer, the consumer and the general public. 20 pp. American Standards Assn., Dept. PR, 70 East 45th St., New York 17, N. Y.

Quality Checking Floor Hinge

(AIA 27-B) Describes control of *Pilloo* checking floor hinges for all types of doors in public, commercial and industrial buildings. 12 pp. *Pillsburgh Plate Glass Co.*, 632 Fort Duquesne Blvd., *Pillsburgh* 22, *Pa*.*

(More Literature on page 350)

How new heating and ventilating system cuts schoolroom construction costs...



Dunham-Bush VARI-AIR Unit, concealed in mixing flue behind blackboard, mixes fresh and recirculated air—silently diffuses it to classroom through overhead grille.

Dunham-Bush VARI-AIR—designed to help the "hard-pressed" budget . . . and save valuable floor space

School construction costs can't go anywhere but down when Dunham-Bush VARI-AIR heats and ventilates classrooms. This new system satisfies all health and comfort standards . . . does it at a cost that meets with full approval of any school board member.

In addition to healthful, silent heating and ventilating, VARI-AIR puts school air conditioning within easy financial reach of construction budgets. This optional use of VARI-AIR can be economically provided for when the system is installed.

Offers Numerous Advantages

Lower Costs: Dunham-Bush VARI-AIR eliminates need for inthe-room cabinet ventilators . . . provides greater savings in classroom heating construction costs. Total absence of complex controls saves both first and maintenance costs.

Minimum Temperature Variations: Dunham-Bush's centralized temperature control system holds room temperatures within prescribed limits by automatically compensating for weather change and heat loss

Space Saver: No floor space in classroom is given over to either heating or ventilating with a Dunham-Bush VARI-AIR system.

How VARI-AIR Operates

Only three primary parts to the system. VARI-AIR Units are concealed in wall spaces, mix fresh and recirculated air and diffuse it into classrooms.

Heating and Ventilating Unit—generally one to the entire system—pulls in fresh outside air, tempers, filters and discharges it through a tunnel or ceiling plenum to the VARI-AIR Unit.

Radiation—Dunham-Bush THERMO VECTOR® "along-thewall" radiation saves floor space and provides all necessary heat whether used with steam or hot water.

For complete information, contact any Dunham-Bush Representative or mail the coupon.



Dunham-Bush Finned-Pipe Radiation runs along outside walls, under windows to eliminate chilling downdrafts, save premium classroom floor space.



Dunham-Bush Heating and Ventilating Unit pulls in outside fresh air and tempers, filters and discharges it through a tunnel or ceiling plenum to VARI-AIR Units



Dunham-Bush VARI-VAC® Temperature Controls provide centralized operating station for all system settings and readings. This electronic "brain" helps system save up to 40% on fuel.

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DUNHAM-BUSH, INC., WEST HARTFORD 10, CONN., U.S.A.

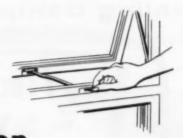
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A pin-and-socket device locks the sash in many positions between fully open and fully closed. The aluminum Underscreen Operator is PELLA'S exclusive way of opening and closing sash without screen interference. And it's furnished at no extra cost.

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The aluminum Underscreen Operator arm slides through a solid Nylon guide for smooth, quiet operation. Guide is wear resistant...needs no lubrication.

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PELLA MULTI-PURPOSE WINDOWS are low in cost, yet have these quality features and many others—like all-aluminum and stainless steel hardware and stainless steel weatherstripping, sash and frame of select western pine, toxic-treated, mortised and tenoned. Self-storing, inside "storms" available when specified. A packaged window. Completely factory assembled. See our catalog in Sweet's Architectural or Light Construction File. Representatives throughout U. S. and Canada.

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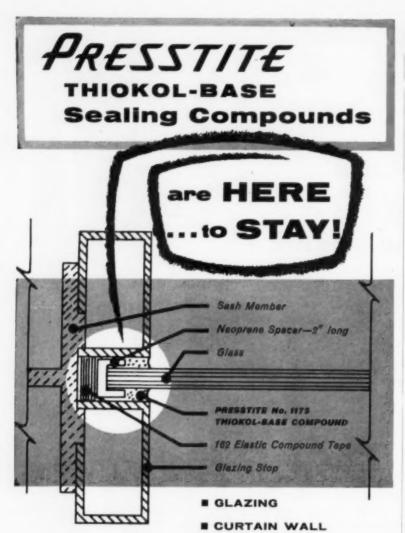
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illustrates the use of Presstite No. 1175...a sealant that owes its many desirable characteristics to its Thiokol base: intimate adhesion... year after year durability against water, air and dust (including conditions of torrential and gale intensity)... resiliency to withstand the severe stresses found in large expanses of glass and metal.

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OFFICE LITERATURE

Cabinet Hardware

Catalog F-200 features new styles of pulls, catches and hinges in finishes ranging from solid brass and aluminum to wrought steel finished in satin copper and polished chrome. 12 pp. Stanley Hardware Div., The Stanley Works, 195 Lake St., New Britain, Conn.*

Wedge-Lock Clay Pipe

Describes advantages and installation details of Wedge-Lock bell-and-spigot clay pipe. 4 pp. The Robinson Clay Product Co., Akron 9, Ohio.*

Underfloor Electrical Distribution

Bulletin 756 catalogs Walkerduct, Flushduct, Power Raceway and Headerduct systems of underfloor electrical distribution. 8 pp. Walker Brothers, Conshohocken, Pa.*

Aluminum in Stock at Ryerson

Covers new stocks of Reynolds aluminum to service the Chicago, Milwaukee and surrounding markets. 8 pp. Joseph T. Ryerson & Son, Inc., Box 8000-A, Chicago 80, Ill.

Hudee Handbook

Contains a complete listing of flat sinks, bowls and lavatories of 46 manufacturers and the correct Hudee frame to use with each. Walter E. Selck & Co., Chicago 10, Ill.

Multiple Tube Dust Collector

Explains operation and construction of the Cyclo-trell dust collector, with the aid of drawings, cutaways and collection efficiency and capacity nomographs. 12 pp. Research-Coltrell, Inc., Bound Brook, N. J.

Better Patient Care

Tells how hospitals can improve patient care and make maximum use of nursing time and skills with hospital communications systems. Includes summary of time and motion studies. 12 pp. Executone, Inc., 415 Lexington Ave., New York 17, N. Y.*

Amtico Customotifs & Decorstrips

Introduces a new concept in customdesigned vinyl floors, in which a multitude of unusual designs and effects can be achieved. 6 pp. American Biltrile Rubber Co., Inc., Trenton 2, N. J.*

(More Literature on page 354)

Give your clients

greater freedom_ in room arrangement





Otto Haisley School, Ann Arbor, Michigan

Louis C. Kingscott and Associates, Inc. Architects and Engineers Kalamazoo, Michigan

Shirrer Construction Company General Contractors Pontiac, Michigan

William Bortolotti and Sons Mason Contractors Detroit, Michigan

The combination of light-directing glass block and vision strip keeps brightness at comfortable levels, provides vision and ventilation.





Acting as a daylighting team the Toplite Panels and glass block provide sufficient daylight during normal days without need for artificial lighting.

Toplite Roof Panels supplement light from sidewalls in deep rooms or completely daylight windowless rooms

Now, near the windows, and far from them, good daylight can be everywhere. No longer is it necessary to confine close detail work to the area nearest the windows. Toplite Roof Panels permit daylighting of all building areas regardless of location or distance from exterior walls. The prismatic glass units in O-I Toplite Panels "think" before they transmit the sun's rays. Needed North light and the soft low rays from the South are readily accepted. But rays from the high summer sun are rejected. Glare and heat of oldfashioned skylights are eliminated.

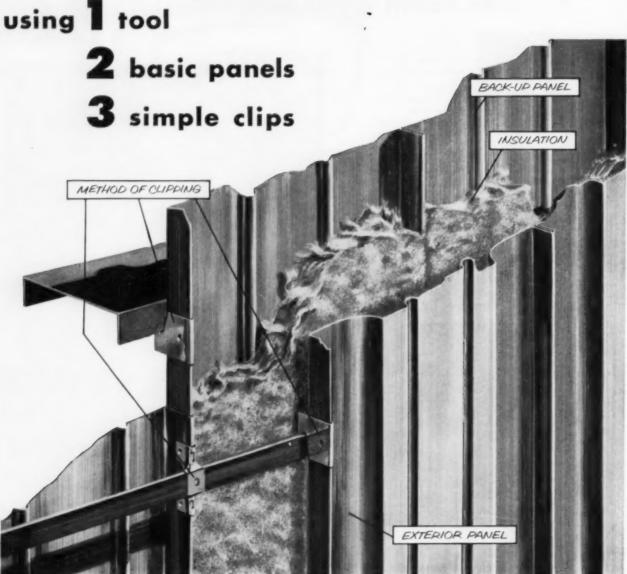
The complete story of this great new advance in efficient utilization of free day-light is available in a new booklet on Toplite Roof Panels. For your free copy. write today: Kimble Glass Company, subsidiary of Owens-Illinois, Dept. ARIO, Toledo I, Ohio.

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TWO (1) PRODUCTS

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GENERAL OFFICES · TOLEDO 1, OHIO

with new Stran-Satin Curtain



The new Stran-Steel curtain wall system with exclusive Stran-Satin combines a satin-smooth finish, free of spangled patterns, with the protection of a noncorrosive zinc coating. You get the low cost of steel, plus the eye-appeal of far more expensive materials. Stran-Steel curtain wall system consists of two basic panels and has a simple field erection assembly technique. Panels

are never pierced or marred by bolts, screws or rivets. By using special clips and a crimping tool, you get a smooth, leakproof surface. This assembly technique provides a modern method of wall or fascia construction for industrial, commercial, recreational, school, hospital or other public buildings. And buildings go up fast so other trades can begin work sooner.

Wall System



Back-up panel is clipped to horizontal girts of the building's framework. At the joints, the panels overlap and interlock.



Ten-foot steel bars are clipped horizontally and are on 4-foot centers. The clips are crimped to provide a permanent assembly.



Noncombustible insulation is inserted between the back-up panel and the steel bars.



Exterior panel is dipped to 10-foot bar and crimped in place. Next panel overlaps and covers clip for an unbroken surface.



Stran-Steel curtain wall is a quality product designed to meet strict architectural requirements.

EXTERIOR PANEL

Exterior panel is heavy gage steel with *Stran-Satin* finish. Continuous lengths up to 54 feet can be furnished in three gages—18, 20 or 24.

BACK-UP PANEL

Back-up panel is also available up to 54-foot lengths in three gages with exclusive *Stran-Satin* finish. Offset construction eliminates metal-to-metal contact increasing insulating efficiency and reducing condensation.

INSULATION

Sections are designed for 1½-inch batt-type insulation. With a "U" factor of 0.14, this panel has the insulating efficiency of a 16-inch masonry wall.

Here's where you can get more information:

Atlanta 3, Ga., 206 Volunteer Bldg.
Cleveland 15, Ohio, 20950 Center Ridge Rd.
Detroit 29, Micht, Tecumseh Rd., Ecorse
Houstan 5, Tex., 2444 Times Blvd.
Minneapolis 4, Minn., 708 S. 10th St.
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OFFICE LITERATURE

Youngstown Kitchens

Specifications booklet, laid out in clearly marked sections, covers entire line of cabinets, cabinet sinks, dishwashers, disposers and built-in cooking equipment. 16 pp. Youngstown Kilchens Div., American-Standard, Warren, Ohio.

Chan-L-Form Steel Studs

Gives sizes, methods of partitioning, types of lath to use and other data about Chan-L-Form steel studs. 4 pp. This subject is covered also in a new 16-page catalog from The Bostwick Steel Lath Co., Niles, Ohio.

RCA Custom-engineered Sound

Describes RCA sound, music and public address systems installed in auditoriums, outdoor theaters, stadiums, convention halls and race tracks. 8 pp. Radio Corp. of America, Sound Equipment, Camden, N. J.*

The 2.4.1 Plywood Floor System

Laboratory Report 72 covers engineering data, load tests and construction details on 2.4.1, the new combination subfloor and underlayment plywood panel. 22 pp. Douglas Fir Plywood Assn., Tacoma 2, Wash.*

Complete Sheet Metal Facilities

Heavily illustrated 34-page booklet describes the production capacity and products of Elkay Mfg. Co., 1870 South 54th Ave., Chicago 50, Ill.*

Daylighting for Schools

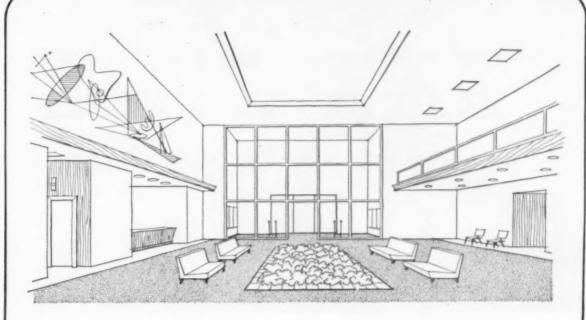
Describes the latest methods of daylighting school buildings with glass block and prismatic glass skylights. Contains more than 40 photos and drawings. 20 pp. Kimble Glass Co., Toledo 1, Ohio.

Roof Ventilators (AIA 30-D-1)

Bulletin A-112A covers a full line of roof ventilators, with sizes, specifications, performance data and dimensional drawings. 16 pp. Hartzell Propeller Fan Co., Piqua, Ohio.

Sparton Remote Control System

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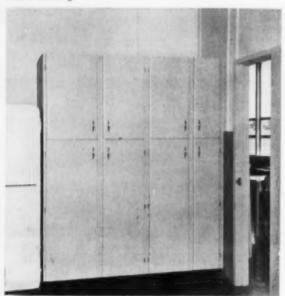
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Teachers' Wardrobe Closet



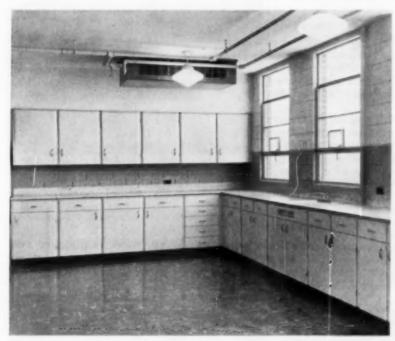
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THE RECORD REPORTS WASHINGTON TOPICS

(Continued from page 48)

Pacific war occurred in Manila Bay that this choice was adequately justified. Also, it is more accessible than any of the small South Pacific islands where single but significant engagements took place.

The large portion of Corregidor on which the memorial will be placed is one and one-half miles across in either direction with a central altitude of 589 feet above sea level. The exact site will be the 1000-acre plateau at the geographical center of this part of the island which is roughly 500 feet in altitude.

The Philippine government has created a Corregidor-Bataan National Shrines Commission which will study the American design and approve any final selection.

The architects were advised that Manila is in a warm and humid climate, necessitating the free flow of air. This suggests the use of grilles rather than windows. The possibility of earthquakes in the area must be considered. It is planned for the final winner only to visit the site before he begins his final drawings. All the competing architects are supplied with maps, pictures and descriptive material giving a thorough rundown of Island conditions.

The Commission, besides O'Neal, is composed of:

Senators Alexander Wiley (Wis.), Paul H. Douglas (Ill.), and Barry Goldwater (Ariz.), and Representatives James E. Van Zandt (Pa.), Thurmond Chatham (N. C.), and James P. S. Devereux (Md.); Paul Clifford Smith and John William Hausserman are the non-Congressional members.

GOVERNMENT PLANS NOW FOR BELGIAN WORLD'S FAIR IN '58

The government has appointed Edward Stone, New York, architect for the United States Pavilion at the Belgian World's Fair, to be held at Brussels in 1958.

Known as the Universal and International Exhibition of 1958, this forthcoming world's fair will be of what State Department terms the "first category," placing it among the largest fairs of all time. Some 45 nations and a number of international organizations will participate. A Commissioner General has been

(Continued on page 362)

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Bottomi KINDERGARTEN—Hope Valley Elementary School, Hope Valley, R. I..., Close-ceiling Mounted Holophane PARADOME* Luminaires, 300 W. Incandescent . . . Illumination—33 footcandles. Mac Connell and Walker, Architects, Apponaug, R. I.

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THE RECORD REPORTS WASHINGTON TOPICS

(Continued from page 358)

named by President Eisenhower to supervise U. S. participation with the assistance of two deputies. Salaries for these positions were scheduled to run in excess of \$20,000.

Before it adjourned, the 84th Congress authorized this country's participation in the Belgium event and appropriated \$4 million as a starter toward a total cost estimated at \$15 million. The U.S. National Pavilion, to house this nation's official exhibits, will cost around \$5 million and provide approximately 200,000 square feet of exhibit space.

The exhibition of 1958 will grant the customary awards, State Department here said. It considers the most important of these to be the architectural award for the best national pavilion. This incentive alone will impel participating countries to devote a great amount of attention to these structures, incorporating latest architectural developments and the newest construction details and materials.

State confidently expects that both the Iron Curtain countries, led by the Soviet Union, and the Free Countries of the West will display their best in modern architecture and construction at the Brussels exhibition.

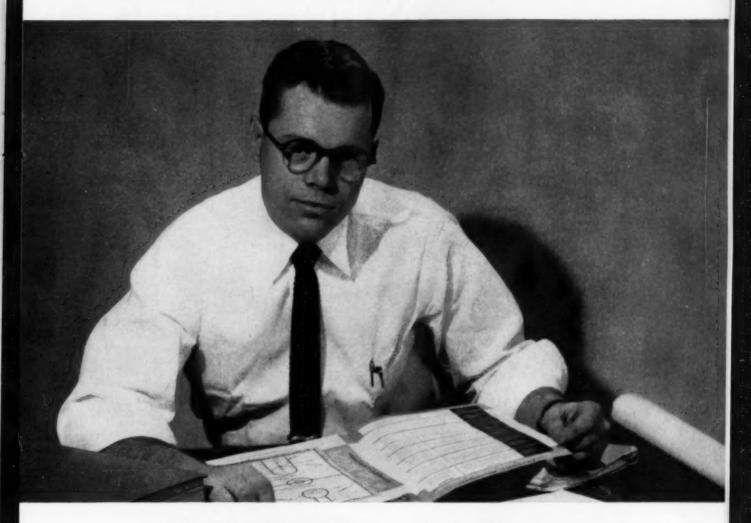
Some limitations will be imposed on the designers since these structures will be temporary. Many of them are being erected on the Palace grounds and must be removed six or seven months after they are opened. The fair opens officially on April 3, 1958 and runs through the following October. Belgium is spending a quarter of a billion dollars on the venture and expects more than 35 million persons to view it. The theme: A World View - A New Humanism.

The basic building in the American portion is expected to contain 300,000 square feet. It is not likely to be more than two stories because of foundation problems occasioned by a tramway tunnel which bisects the U.S. ground. Early plans called for expenditure of about \$3 million on the basic structure, \$1 million on architectural embellishment, and \$1 million on landscaping. The now bare area will require substantial plantings, it was indicated. The figures include \$300,-000 which must be set aside for the cost of demolition when the fair ends.

(Continued on page 366)

an open letter to the specifications writer...

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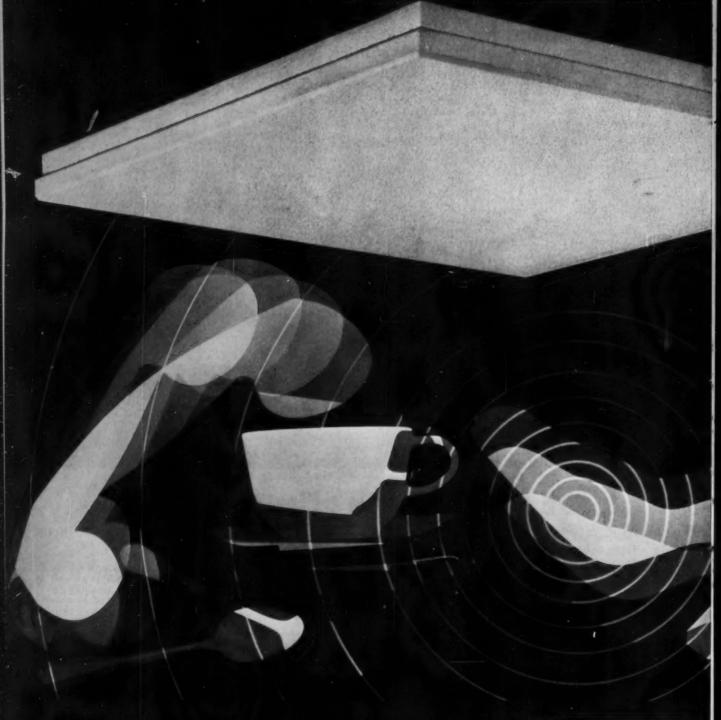
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A55-296	12" x 12"	1.22	Natural White	36"	7	. 67	.88	.00	70	. 86	.86	.70
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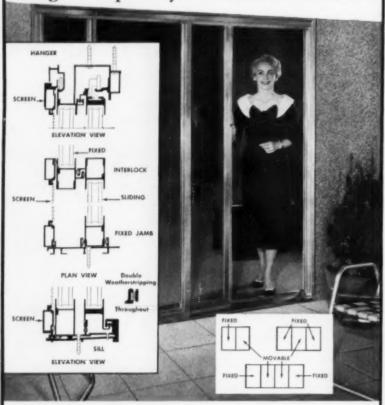
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THE RECORD REPORTS WASHINGTON TOPICS

(Continued from page 362)

A committee of three architects — Mr. Stone, Earl T. Heitschmidt, Los Angeles, and Edgar Williams, New York — visited the site and reported to the State Department that the budget appeared to be adequate. The problems created by the tramway tunnel, now under construction, were noted. It was suggested that a construction contractor be called in early in the project; such a move, it was felt by the architects, could aid in eliminating delays and speed the work.

ENROLLMENT FIGURES SHOW SCHOOL NEEDS STILL RISING

The U. S. Office of Education figures on school and college enrollment for another year came out last month giving little hope for any major inroads on the accumulated backlog of classroom needs. Forecasts for the next 10 years indicate a continuing upward trend in the numbers of children to be educated in the United States, the Office said. It tentatively estimated an increase of 30 per cent between 1956 and 1965.

The current rise in elementary and high school enrollment called for 36,800 additional classrooms to accommodate children in the lower grades — through eight — and 14,600 more classrooms for children in grades nine through 12. This was based on classes of 30 pupils in the lower grades and 25 in the higher.

Last year's reports from state departments were cited showing that during the 1955–1956 school year about 67,000 public elementary and secondary school classrooms and related facilities were scheduled for construction. The cost was estimated at \$2.5 billion compared with a cost of \$2.2 billion for the 60,000 new classrooms constructed the previous year.

Said the Office of Education: "The figures indicate that some progress is being made in reducing the classroom shortage accumulated over a period of years. If the needs of children for classrooms are to be met in a reasonable time, however, the rate of construction should be sharply increased."

Of the total of \$2.5 billion in planned school construction last year, local school districts contributed about \$2 billion and the states about \$160 million in grants for capital outlay and debt

(Continued on page 370)

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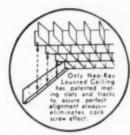
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WASHINGTON TOPICS

(Continued from page 366)

service and \$326 million in loans. The Federal government contributed \$94 million for school construction in Federally-affected areas.

Presently 58.1 per cent of the funds for public education are obtained through local property taxes, it was noted. State taxes on incomes, sales, and other measures of business activity produce 37.4 per cent of the funds for public schools. The Federal government pays the remaining 4.5 per cent.

SCHOOL LIGHTING SUBJECT OF NEW A.A.S.A. BROCHURE

A new pamphlet of 24 pages, "Common Sense in School Lighting," published by the American Association of School Administrators is helping school officials keep up with the latest technical developments in school lighting.

A number of persons with special competencies and skills in the design of school lighting helped prepare the pamphlet, according to Paul J. Misner, A.A.S.A. president. The original manuscript was prepared by Charles D. Gibson, supervising field representative for school planning in the California State Department of Education. More than 40 superintendents, architects, and school plant planning specialists reviewed the drafts of the manuscript and offered comments and suggestions for improvement, Misner said.

The booklet presents the subject in non-technical style, noting recent advances made in the science of lighting. New instruments and data for designing lighting systems, improvements in equipment, and major modifications in building design through use of new materials all have made their contributions.

The Association takes the position that good lighting has such a profound effect upon good learning that the modern school administrator, if he wants an "educationally functional" school, must have enough scientific information to work on a team with skilled architects and engineers.

The new booklet presents a set of what A.A.S.A. calls realistic goals which can be met with currently available materials and without elaborate and costly school design. It maintains that good planning requires that all design factors concerned with light and light control be treated as related parts of one large problem — that of visual environment. This is called a combination of daylight, electric light, surface brightness, color, space relationships, and other factors.

Reconditioning existing facilities and cost control also are covered in the publication. Ten checkpoints at the end list the kinds of action that will result in good lighting installations.

(The booklet can be obtained from the American Association of School administrators, 1201 16th Street NW, Washington 6, D. C. at a price of 50 cents per copy.)

B.R.I. MEMBERS WILL DISCUSS GLASS AT TWO DAY MEETING

Windows and Glass in the Exterior of Buildings is the subject of a two-day research correlation conference to be conducted by the Building Research Institute in Washington, D. C. November 14 and 15. The meetings will be held (Continued on page 372)



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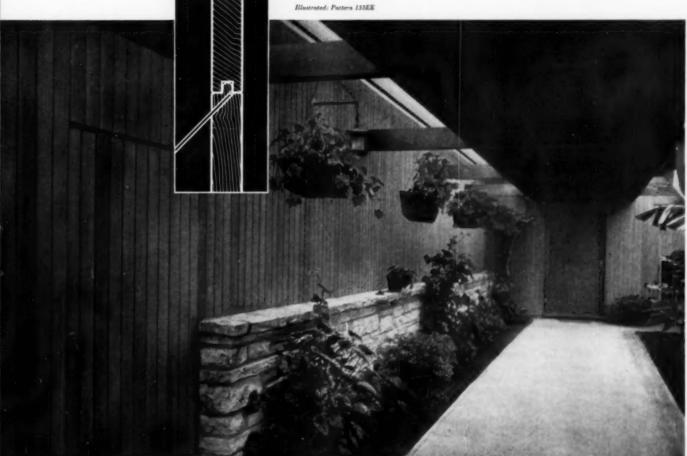


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Architect: Frederick L. Langharst, AIA Photo: Phil Palmer

CALIFORNIA REDWOOD

California Redwood Association • 576 Sacramento Street, San Francisco 11

WASHINGTON TOPICS

(Continued from page 370)

in the U. S. Chamber of Commerce building and will be open to the public.

The objective of this conference is to report on the newest developments of glass use and to correlate the information given. Problems in the use of windows and glass products will be posed and solutions offered. An important result will be the identification of research that needs to be done in this field. Nationally known architects and engineers and glass industry technologists are on the program.

Conference sponsors include the Aluminum Window Manufacturers Association, the Andersen Corporation, the Architectural Woodwork Institute, Breneman-Hartshorn Inc., E. K. Geyser Company, Libbey-Owens-Ford Glass Company, Kimble Glass Company (Owens-Illinois subsidiary), National Woodwork Manufacturers Association, Inc., Pittsburgh Corning Corporation,

and the Pittsburgh Plate Glass Company.

This will be the thirteenth research correlation conference conducted by the Institute or the Building Research Advisory Board.

ACE UNIT LEAVES MIDWEST FOR WASHINGTON OFFICES

The Army Corps of Engineers' military construction field group has moved from Omaha, Nebraska, to Washington, D. C. This is a small unit of experts established in 1952 to inspect and analyze military construction projects.

At Washington the unit continues as an element of the Office of the Assistant Chief of Engineers for Military Construction, but it has been incorporated in a new construction advisory division. Its members continue to travel throughout the United States and to many overseas areas inspecting and advising on global military construction operations of the ACE. To date this group has inspected some \$66 billion worth of military projects and individually, members have covered more than 100,000 miles.

The field group does not duplicate normal construction inspection provided by the District Engineers for day-to-day supervision of contractor operations. Rather, it is a small organization of highly qualified experts available for analysis and resolution of unique construction problems and prompt incorporation of the latest and best techniques in Corps of Engineers world-wide construction practices.

The members of this unit make recommendations for changes in design where it is appropriate. "With annual military construction programs of the services leveling off to a more nearly constant volume, it has been found possible to effect some economies and at the same time achieve a more effective operation by consolidating the Field Group with other field service elements of the Corps in Washington," said Maj. Gen. Charles G. Holle, acting chief of the Corps.

GRADUATE-TRAINING PROGRAM READY AT FIRST OF YEAR

The long-awaited architect-in-training program of the American Institute of Architects certainly will be launched before the first of next year, Walter A. Taylor, A.I.A.'s director of education and research, said at the Octagon head-quarters where he was working over the

(Continued on page 376)



with | OUZE Lo-tran GLASS* the key to Balanced Brightness

Investigate this new glare-shielding Lo-Tran Glass that literally "puts sun glasses on class rooms." Tinted a neutral gray, Lo-Tran converts brightest sunlight to a uniform, comfortable illumination in the same way sun glasses do. Healthful ultraviolet passes readily, yet 58% of the total solar energy is barred. Lo-Tran creates no color distortion when looking out, yet limits vision into the class room to nearly zero during daylight hours . . . thus eliminating costly shades, drapes, etc.

WRITE for Bulletin L-2 for technical details on this revolutionary school glass.

*Designed to meet the balanced brightness requirements of the National Council on Schoolhouse Construction.



house glass corporation point marion, pennsylvania

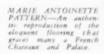
WORLD'S OLDEST AND LARGEST MANUFACTURER OF SUN GLASS LENSES



MONTICELLO PATTERN—This famous pattern was created for the flooring of Thomas Iefferson's beloved Monticello . . . the Old Dominion Mansion which our Third President both planned and built in historic Virginia.

American flooring masterpieces for today's distinctive homes

FONTAINEBLEAU PAT-TERN — Fontainebleau is a faithful reproduction of the floor pattern that enhances the famed Fontainebleau Palace, heribplace of kings





Where your flooring selection is dictated by good taste alone . . . where the home you plan must stand out from its neighbors . . . you'll find that Wood-Mosaic Parquetry Floors in rich and rare hardwoods will add far more to the value of the home than their modest cost.

And the modern trend is to show these rich and warm hardwood floors in all their elegance. There are many exquisite patterns in a variety of woods. Write today for our full catalogue.

WOOD-MOSAIC CORPORATION
PARKAY, Inc. Division LOUISVILLE 9, KENTUCKY



Expansion at the Indianapolis plant of the Inland Container Corporation required additional steam capacity. The expansion was complicated by the limited space available. Inland's Engineering Department, with the assistance of W. J. Barrows & Associates, Engineering Consultants, solved the expansion problem.

Today the power plant has a new 30,000 lb.-per-hr. boiler and also a 300-ton silo. Liberal use has been made of automatic controls; coal and ash handling have been completely mechanized. Now steam loads are adequately maintained. Boiler room performance has been highly satisfactory and economical. Furthermore, this modernization has enabled Inland Container to effect considerable savings by more efficient operation of its power system.

For further information or additional case histories showing how other plants have saved money burning coal, write to the address below.

NATIONAL COAL ASSOCIATION Southern Building • Washington 5, D. C.

Consult an engineering firm

Designing and building hundreds of heating and power installations a year, qualified engineering firms can bring you the latest knowledge of fuel costs and equipment. If you are planning the construction of new heating or power facilities—or the remodeling of an existing installation—one of these concerns will work closely with your own engineering department to effect substantial savings not only in efficiency but in fuel economy over the years.

facts you should know about coal

In most industrial areas, bituminous coal is the lowest-cost fuel available • Up-to-date coal burning equipment can give you 10% to 40% more steam per dollar • Automatic coal and ash handling systems can cut your labor cost to a minimum. Coal is the safest fuel to store and use • No smoke or dust problems when coal is burned with modern equipment • Between America's vast coal reserves and mechanized coal production methods, you can count on coal being plentiful and its price remaining stable.

HOME OFFICE BUILDING MUTUAL BENEFIT LIFE INSURANCE CO. BUILDING, Newark, N. J. ARCHITECT: Eggers and Higgins, Architect CONTRACTOR: George A. Fuller Co.



KAWNEER METAL WALL engineered, manufactured and installed by Kawneer

Other Kawneer metal wall jobs:

Tishman Buildings, Los Angeles Equitable Life Building, San Francisco Insurance Exchange Building Oakland

Imperial Oli Co., Sarnia, Ontario Newark Center Building, Newark Kaleer Aluminum, Ravenswood, W. Va. From engineering through installation, Kawneer takes the complete responsibility for every metal wall contract. Years of creative engineering and production in the field of architectural metals has culminated in a new service for architects and contractors. This Mutual Benefit Building is an example of Kawneer's ability to combine many integrated skills into one department to service the contractor's needs. This department consisting of rales engineers, construction engineers, production men and installers, is another example of how Kawneer can gear itself to the needs of its customers. For complete information, please write:

METAL WALL DEPARTMENT, Kawneer Company, Niles, Michigan.

Write for folder describing Kawneer services and metal wall jobs.





WASHINGTON TOPICS

(Continued from page 372)

few remaining details of the project. Only the printing of forms and certificates was holding up final application of this system for aiding the trainee.

Every graduate architect looking forward to licensing will be affected. Under the plan he can, if he chooses, take advantage of the system by enrolling with the A.I.A. A complete record of the trainee's architectural activity will be kept in the form of a log book listing the hours spent on all design work. Covering the individual from degree to license, the data will provide an accurate and valuable record of these interim duties, Mr. Taylor said.

The record is to be checked quarterly for its accuracy by employers. It in no way reflects the trainee's ability, merely the performance of his work. The advisory committee of the appropriate A.I.A. chapter provides a once-a-year check to note progress. A.I.A. headquarters in Washington keeps a record of the accomplishments.

This program in no way relates to state board functions, and the data kept can or need not be used by the boards in consideration of a candidate for license. The National Council of Architectural Registration Boards has approved the plan for record keeping but the effort is not connected directly with N.A.C.A.R.B. functions.

GSA ANNOUNCES APPOINTMENT OF HUNTER TO NEW POSITION

In a general reorganization of the Public Buildings Service, a constituent agency of the General Services Administration, Leonard L. Hunter has been appointed Assistant Commissioner of Design and Construction. Mr. Hunter, who will serve under PBS Commissioner F. Moran McConihe, has been for the last two years supervising architect to the agency, and has been affiliated with PBS since its inception in 1949.

HOUSE CHARGES NEGLECT OF AIRPORT DEVELOPMENT

A switch in the direction of criticism occurred when a Congressional subcommittee spanked the Department of Commerce and the Bureau of the Budget for past failures to request enough money for airport construction. Here are excerpts from a House subcommittee (Legal and Monetary Affairs) report which charged "lack of aggressive leadership" for airport development:

Citing a Commerce-convened panel of 1953 to determine whether the Federal aid airport program should be continued, the report said that "less than a year earlier the Doolittle Commission had endorsed extension of the program. The Commerce panel was composed of airport, airline and aviation trade group executives, and it was no surprise when, in the fall of 1953, the panel concurred in the findings of the Doolittle Commission."

Turning its fire on the Budget Bureau, the subcommittee said: "Despite the recommendations of the Commerce panel, the Budget also cut fiscal 1956 requests of the Civil Aeronautics Administration for \$41.5 million to \$11 million following its usual pattern."

It was noted that Congress approved a \$231.5 million four-year airport development program last year over objections of the Commerce Department.

(Continued on page 380)



Of all chalkboards, slate communicates best. White chalk on slate produces the desired high contrast to permit the student to grasp the written message instantaneously! The writing surface of slate, too, is so superior that it is the standard to which the writing qualities of all other substitutes are compared! Easy to clean . . . virtually indestructible . . . slate is lowest in maintenance costs under normal usage conditions. For timeless beauty and durability, compare before you install . . . inquiries welcomed on specific properties of slate.





North Street Elementary School was designed by Sherwood, Mills & Smith, Architects, Stamford, Cann. General Contractors.

A. Barbaresi & Son, Inc., Mt. Vernon, N. Y.; Structural Engineer; Seelye, Stevenson, Value & Knecht, New York City,

STEEL JOISTS HELPED LOWER BUILDING COSTS OF ELEMENTARY SCHOOL IN CONNECTICUT

North Street Elementary School in Greenwich, Conn., is a highly attractive example of modern school design. It starts with kindergarten and extends through the sixth grade, with age groups separated into primary and intermediate wings, which extend from a central unit of offices and non-classroom areas. Chief feature of the school's design is the fact that it is scaled to small children's use. The gymnasium has a child-height stage; and ceilings throughout the building are lower than usual.

Construction of the Greenwich school was planned to be both attractive and economical. Exposed interior brick, liberal use of glass and bright colors make it eye-catching, yet construction cost was held to \$14.85 per sq ft.

Bethlehem Open-Web Steel Joists were used in the roof structure. The advantages of using Bethlehem Joists were many. They were delivered to the job site tagged and ready for placing with no delays to the construction schedule. They required only field welding to secure them in place, and

to provide a rigid, permanent construction, a factor which will help hold future maintenance to a minimum. Pipes and conduits could be run right through the open webs, and installation of recessed lighting fixtures was simplified.



BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
On the Pacific Coast Berthlehem products are sold by Berthlehem Pacific Coast
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BETHLEHEM OPEN-WEB STEEL JOISTS





Movable louvers of Alcoa® Aluminum automatically control sunrays on

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE BUILDING

Washington, D. C.

Louvers electrically operated and clock controlled to follow the movement of the sun are the latest refinement in sun control for monumental buildings. Appropriately enough, this newest technique is applied to the handsome new headquarters for the American Association for the Advancement of Science in Washington, D. C.

The architects selected this sun-control method because Washington is situated in a warm, sunny climate. The positioning of the sunshades was based on a report prepared by Olgyay & Olgyay, of Princeton, N. J., consultants in climatology. Engineering studies indicated that a considerable reduction could be made both in the original cost and the operation of air-conditioning equipment. In addition, employees benefit by increased comfort and improved lighting conditions.

Three sides of the structure employ the aluminum louvers. They are not necessary for the shaded north side.

Alcoa Aluminum was chosen as the material for this louver system because of its light weight, ability to reflect sun's rays, natural resistance to corrosion and weathering, beauty of appearance and minimum maintenance requirements. These advantages resulted in many other applications throughout this recently completed structure.

Your Guide to the Best in Aluminum Value



THE ALCOA HOUR—Television's Finest Live Drama Afternate Sunday Evenings



Architectural consultants on Alcoa's field staff worked closely with the building architects and aluminum fabricators in the preparation of the specifications for alloys and finishes. These services are available to any architect or construction engineer. When you are planning new construction, aluminum might well be the answer to knotty material problems. You can find out easily with no obligation just by phoning your nearest Alcoa sales office. Or write: Aluminum Company of America, 1888-K Alcoa Bldg., Pittsburgh 19, Pa.



THIS LOUVER SYSTEM provides a striking architectural design that enhances the over-all appearance of the building. Other Alcoa Aluminum applications include windows, window surrounds, aluminum entrances, lobby doors, elevator surrounds and railings. All aluminum applications are natural Alumilite® finish, except for the 18" deep window surrounds, which are Architectural Gray 2020.

ARCHITECT—Faulkner, Kingsbury & Stenhouse, A. I. A., Washington, D. C.

GENERAL CONTRACTOR—William P. Lipscomb Co., Inc., Washington, D. C.

ALUMINUM SUBCONTRACTORS—Universal Corp., Dallas, Texas. Metal glass facades, accessories and solar devices.

A. F. Jorsa Iron Works, Inc., Arlington, Va. Miscellaneous architectural metal, including aluminum entrances, lobby doors, elevator surrounds, railings.

THE RECORD REPORTS WASHINGTON TOPICS

(Continued from page 376)

A report conclusion: "Development and growth being as fantastic as it has been in the field of civil aviation, necessary Federal aid and leadership required in this field was not supported by the budgetary actions of the Department of Commerce and the Bureau of the Budget. The result has been that now, with introduction of commercial jet transports less than three years distant, our . . . traffic control system is outmoded, our navigation facilities woefully inadequate, and our airports in dire need of improvement."

COUNCIL WILL ADMINISTER MEDICAL RESEARCH GRANTS

A recent announcement from Marion B. Folsom, Secretary of Health, Education and Welfare, named the 12 men who will serve as advisory council to the Public Health Service in the administration of funds voted by Congress for Federal assistance to medical research facilities construction programs. The \$90 million program, to be carried over the next three years, will be disbursed as Federal grants, to be matched by the institutions, for construction of facilities for research in medicine, osteopathy, dentistry and public health and related sciences.

The new council, which will be known as the National Advisory Council on Health Research facilities, is composed of eight members selected from the medical professions and four members from the general public. Members are Dr. George N. Aagard, Seattle; Eugene N. Beesley, Indianapolis; Dr. Thomas H. Hunter, Charlottesville, Va.; Dr. Carlyle Jacobsen, Delmar, N. Y.; Dr. Paul C. Kitchin, Columbus, Ohio; Dr. Oliver H. Lowry, St. Louis; Dr. Robert A. Moore, Pittsburgh; F. C. Sowell, Nashville, Tenn.; Dr. John E. W. Sterling, Stanford, Cal.; Dr. Thomas B. Turner, Baltimore; Dr. James W. Wilson, Providence, R. I., and James Bradshaw Mintener, who will resign his position as Assistant Secretary of Health, Education and Welfare. The Surgeon General will serve as chairman and. with an official of the National Science Foundation, as ex officio member.

CHARTER, BY-LAWS READY FOR NEW MODULAR COUNCIL

Proposals for creation of a new Modular Building Council were kept alive with the preparation of by-laws and a charter for the organization by a subcommittee of the Joint American Institute of Architects-Producers' Council committee. Harry C. Plummer, director of engineering and technology for the Structural Clay Products Institute, is chairman. The rules were to be submitted to organizations sponsoring the modular measure principle sometime this month. A.I.A. participation in the effort to establish and conduct a new modular building organization was assured when the board of directors, at its post-convention meeting in Los Angeles in May - approved a role for the Institute in planning activation of the new group. The next logical step, following approval of charter and bylaws, would be the employment of a full-time secretary and staff succeeding William Demarest, Jr., who has resigned as modular coordination secretary at A.I.A.

(Mure news on page 384)

ANOTHER Design ACHIEVEMENT

HAWS Model 1505





Another HAWS product of modern styling is now available for free adaptation to your architectural designing. Finished in gleaming white vitreous china, Model 1505 is securely mounted with cast iron wall bracket.

ALL of the dependable sanitation features long associated with HAWS Drinking Fountains are included: Angle-stream, antisquirt fountain head is raised and shielded; Head of chrome plated brass is vandal-proof mounted to bowl; Water pressure is automatically controlled through self-closing valve. This model conforms to government specifications for cantonment-type drinking fountains.



The new 72-page HAWS Catalog is out!

It describes Model 1505 and all of the latest designs in HAWS Drinking Fountains, Electric Water Coolers, Eye-Wash Fountains, and KRAMER Flush Valves.

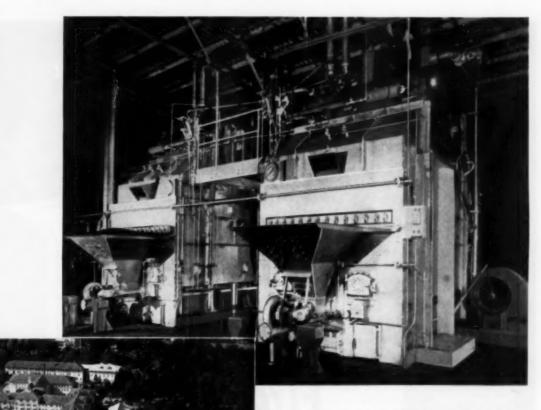
If you haven't already received your copy, write today!





DRINKING FAUCET CO.

1443 FOURTH STREET (Since 1909) BERKELEY 10, CALIFORNIA



Each of the stoker-fired B&W Type FF Integral-Furnace Boilers at Pinehurst is designed to supply 17,000 lb of steam per hr. Wiley & Wilson of Richmond, Va., are the Consulting Engineers.

STEAM COSTS 1/3 LESS AT PINEHURST

Two B&W Boilers Help Cut Fuel and Other Plant Costs at North Carolina Resort

The need for a dependable steam supply that is also efficient and economical led Pinehurst, Inc. to install two coal-fired B&W FF Boilers in re-vamping its central steam plant. A famous winter resort, Pinehurst can't take chances with its steam supply. It must have as much steam as it needs, when and where it is needed. These new boilers replaced five older units to supply steam for all purposes to ten buildings, three of them hotels. In an emergency they provide steam for electric power generation.

By this modernization of its boiler plant, Pinehurst, Inc. gets more steam from less coal and at less cost. And, with automatic boiler controls, simplified coaland ash-handling and substantially reduced maintenance, other costs have also been shaved.

If you use steam for power, processing or heating, be sure that your steam dollar is giving you full value. If you think it isn't, B&W will be glad to put 90 years of steam generation experience at your disposal, to help you modernize or expand your steam plant for important, long-term savings. Write, The Babcock & Wilcox Company, Boiler Division, 161 East 42nd Street, New York 17, N. Y.



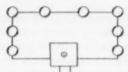


G-786

select the best protection for every building...

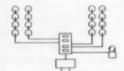
Only EDWARDS makes every Fire Alarm System*

HOME FIRE ALARM



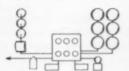
For small homes: the finest low-cost protective feature possible. Edwards Home Fire Alarm is an inexpensive, complete system. U. L. listed detectors. Installation needs only low voltage wiring between detectors and signal unit, gives instant warning of fire.

ZONALARM



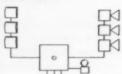
New! Fully automatic Zonalarm system protects large homes and farms 24 hours a day, regardless of power failures... sounds alarm and indicates location of the fire at a central point. Economical protection that's unique in its price range.

TYPE AMVAD



Completely automatic system combined with manual alarm stations, gives 24-hour protection. Operates regardless of power failures. Sounds evacuation signal, indicates location of fire at a central station, may be used to signal municipal fire headquarters automatically. Fully supervised for complete safety.

TYPE CCVA



Simplest supervised system sounds an evacuation alarm without indicating location. Closed circuit, full supervision assures instant warning whenever system becomes inoperative due to open circuits, grounds or other defects.



HOMES

SCHOOLS

HOSPITALS

COMMERCIAL-INDUSTRIAL

*. . . and designs and manufactures every major component!

Only Edwards gives you fire warning systems that cover every building requirement, whatever the size, design, or use! For Edwards makes every type of fire alarm. Your Edwards Technical Specialist can always recommend one that's exactly right for a particular installation.

Over 80 years of designing and manufacturing signaling systems assure easy installation and absolute dependability in every Edwards system, whether manual or automatic, coded or non-coded, for homes, schools, institutions, or commercial build-

ings of any size or design. Complete technical service backs up you and your contractor on every job.

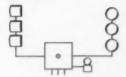
For the best in fire protection, follow the lead of thousands of architects and contractors: specify Edwards. Systems will meet local and state codes. Underwriters listed where applicable. For complete information on any application, call your Edwards Technical Specialist, or write Dept. AR-10, Edwards Company, Inc., Norwalk, Connecticut. (In Canada: Edwards of Canada, Ltd., Owen Sound, Ontario)

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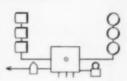
DESIGN • DEVELOPMENT • MANUFACTURE



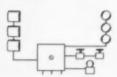
TYPE SSAMR



For smaller buildings: sounds a distinctive alarm signal. For buildings where automatic location is unnecessary. Full supervision with trouble bell guarantees continuous protection. TYPE SSAM



City-connected system sounds a coded signal within the building and also at the municipal fire headquarters, entirely automatically. Recommended particularly for large schools and institutions. TYPE PSSA



Pre-signaling system sounds a coded signal at certain stations only . . . authorized personnel must initiate general alarm. Prevents needless evacuation, protects against the effects of false alarms.

TYPE SSA



For large buildings: coded signal throughout the premises tells where alarm was sounded, locating the fire while it gives the evacuation signal. Fullysupervised system sounds a special trouble bell if there is any fault in the system.

(Continued from page 380)

ON THE CALENDAR

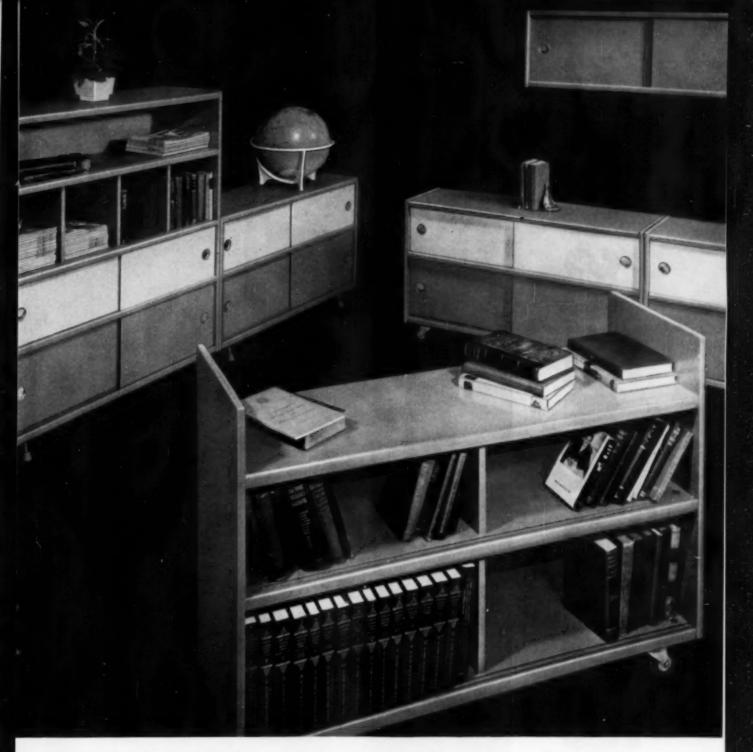
October.

- 1-3 The 12th Annual National Electronics Conference; theme, "Fifty Years of Progress through Electronics" — Chicago
- 7-9 Seventh Annual Gulf States Regioral Conference, American Institute of Architects — Chattanooga, Tenn.
- 8-11 Eighth Mental Hospital Institute, sponsored by the American Psychiatric Association — Shirley Savoy Hotel, Denver
- 8-12 National Metal Exposition and Congress, sponsored by the American Society for Metals — Cleveland
- 9-12 Annual Conference, United States Civil Defense Council — Biltmore Hotel, Atlanta
- 10-12 The 23rd Annual Convention, Architects Society of Ohio— Hotel Commodore Perry, Toledo
- 10-14 California-Nevada-Hawaii Regional Conference, American Institute of Architects, and meeting of California Council of Architects — Yosemite Lodge, Yosemite, Calif.
- 11-12 National Noise Abatement Symposium, sponsored by Armour Research Foundation of Illinois Institute of Technology as part of its 20th Anniversary observance Sherman Hotel, Chicago
- 11-13 Structural Engineers Association of California, annual convention — Reno, Nev.
- 14-16 First International Sanitation Maintenance Show and Conference, sponsored by the Industrial Sanitation Management Association, the Association of Food Industry Sanitarians and the National Association of Bakery Sanitarians — New York Coliseum
- 15-16 Metal Curtain Wall Workshop Conference for members and invited guests of the Building Research Institute — Washington, D. C.
- 15-19 Pittsburgh convention, American Society of Civil Engineers — William Penn Hotel, Pittsburgh
- 18-19 Fourth Annual Convention, Architectural Woodwork Institute — LaSalle Hotel, Chicago
- 18-20 Western Mountain Regional Conference, American Institute of Architects — Hotel Utah, Salt Lake City
- 21-24 Annual Convention, National Association of Housing and Redevelopment Officials Hotel Statler, New York City
- 22-24 Seventh National Conference on Standards, sponsored by the American Standards Association in conjunction with its 38th annual meeting — Hotel Roosevelt, New York City, New York
- 22-26 The 44th National Safety Congress and Exposition, National Safety Council — Chicago
- 24-25 Ninth Annual Meeting, American Concrete Institute — Sheraton-Mount Royal Hotel, Montreal
- 24-26 New York District Regional Conference, American Institute of Architects — Lake Placid Club, Lake Placid, N. Y.
- 25-27 Annual Convention, New York State Association of Architects — Lake Placid Club, Lake Placid, N. Y.
- 28ff Annual meeting, American Council of Independent Laboratories,
 (Continued on page 388)



CORPORATION

2200 COLE STREET . ST. LOUIS 6, MISSOURI



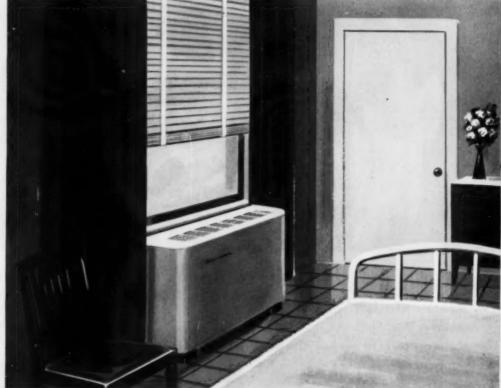
Brunswick movable cabinets make classrooms flexible ...

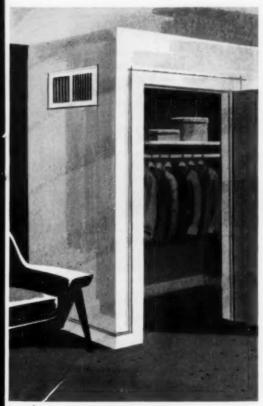
Movable cabinets by Brunswick bring a new dimension to the classroom. Versatile, they meet a broad range of needs. Flexible, they can be re-arranged at will to suit constantly changing curricula, grade levels and a wide variety of teaching methods. Here is a way to avoid the restrictions of built-in cabinets . . . to keep classrooms new or to bring existing classrooms up to modern standards. Write: The Brunswick-Balke-Collender Company, 623 South Wabash Avenue, Chicago 5, Illinois.

Brunswick_

ss news

▼ Carrier's New Room Weathermaker New Carrier Weathermaker





A Carrier's New Unit Weathermaker

New Carrier Modular Weathermaster Room Unit



Here are the <u>newest</u> ways to air condition an apartment building, a hospital, a hotel, a motel, an office building

The four Carrier units you see here have one thing in common—they're brand new!

They open up a good many interesting design and application possibilities in the jobs you're just starting.

They may even suggest compelling changes in plans you've virtually completed.

The New Carrier Weothermaker* (top left) is the one self-contained air conditioner designed for lower installation costs. It requires less space and permits more freedom in the location of the unit, singly or as part of a multiple unit system. Can be installed with or without ductwork, built in the wall, or located completely in the room.

Carrier's New Room Weathermaker (bottom left) is an extremely flexible fan-coil unit. It can be mounted horizontally or vertically, with or without cabinet. Put it on the ceiling or stand it on the floor anywhere in the room. Attach it to a wall. Fur it in. Or recess it under a window. Three sizes — ½, 1, 1½ tons. For chilled or hot water, or direct expansion. Provides individual control of summer cooling or winter heating.

Carrier's New Unit Weathermaker (top right) is a fan-coil unit designed for overhead installation. It installs easily in the top of a closet, over a corridor or hallway, or behind a wall. Three sizes $-\frac{1}{2}$, $\frac{3}{4}$, 1 ton. For chilled or hot water, or direct expansion. Provides individual control of summer cooling or winter heating.

The New Carrier Modular Weathermoster* Units (bottom right) bring a new flexibility to the world's finest air conditioning—the Carrier Weathermaster System. The new under-the-window units with their modular components fit into a variety of combinations—decorative ledges, built-in cabinets and modern bookcases. Now it's easy to make air conditioning part of interior design.

Carrier has all ways to air condition any job—and all Carrier equipment is engineered to the same uniform standard. So short-cut hours of selection by (1) using the Carrier line as a shopping guide and then (2) comparing values. Get in touch with your Carrier dealer or distributor. They're listed in your Classified Telephone Directory. Or write to Carrier Corporation, Syracuse, New York.

•882, U.S. Pol. OR



air conditioning retrigeration industrial heating

(Continued from page 385)
Inc.: until Nov. 1 — Savoy-Plaza
Hotel, New York City

- 29-31 National Planning Conference, Community Planning Association of Canada — Chateau Laurier, Ottawa
- 31ff Texas Regional Conference, American Institute of Architects; until Nov. 2 — Corpus Christi, Tex.

November.

1 Conference on School Planning.

- sponsored by the Michigan Society of Architects and Michigan College of Architecture and School of Education — Michigan Union, Ann Arbor
- 8-10 The 42nd Annual Convention, Florida Association of Architects — Seville Hotel, Miami Beach
- 9-14 National Convention, Society of Industrial Realtors — Park Plaza, St. Louis
- 10-12 Sixth Annual Conference, Adult Education Association, Atlantic City, N. J.

- 10-15 The 49th Annual Convention, National Association of Real Estate Boards — St. Louis
- 12-13 Third West Coast Noise Symposium; theme, "Noise in Buildings" Los Angeles
- 12-16 National Industrial Development Exposition — The Coliseum, New York
- 12-16 National Hotel Exposition The Coliseum, New York City
- 14-15 Windows and Glass in Exterior of Buildings; a public research correlation conference sponsored by the Building Research Institute— Washington, D. C.
- 14-16 Middle Atlantic Regional Council Conference, American Institute of Architects, and annual meeting of Pennsylvania Society of Architects Hershey, Pa.
- 15-17 Annual meeting, Acoustical Society of America — Los Angeles, Calif.
- 18-21 Tenth Exposition of the Air Conditioning and Refrigeration Industry — Navy Pier, Chicago
- 25–28 Semi-annual meeting, American Society of Refrigerating Engineers — Boston
- 25–30 Annual meeting, American Society of Mechanical Engineers Hotel Statler, New York City
- 26-30 Third International Automation Exposition — New York Trade Show Building, 500 Eighth Avenue, New York City
- 26-30 The 22nd National Exposition of Power and Mechanical Engineering, held under the auspices of the American Society of Mechanical Engineers — The Coliseum, New York City
- 27-30 Annual Convention, National Warm Air Heating and Air Conditioning Association — Conrad Hilton Hotel, Chicago

December_

6-7 Modern Builders' Conference, sponsored by Armour Research Foundation of Illinois Institute of Technology as part of its 20th anniversary observance— Chicago

OFFICE NOTES

Offices Opened_

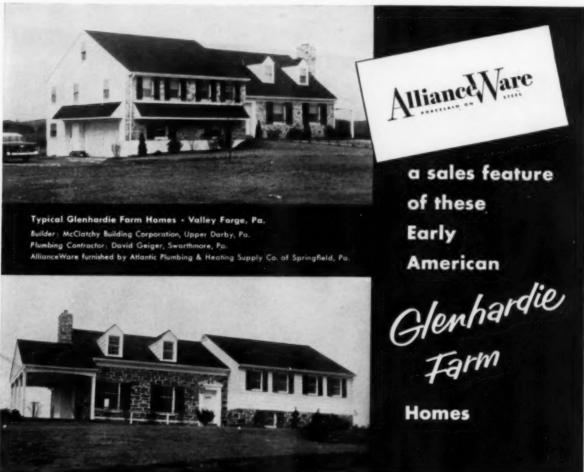
 William H. Caldwell, formerly a senior partner in the firm of Hunter, Caldwell and Campbell, Architects, recently opened offices for the practice of architecture at 1105 Eleventh St., Altoona, Pa. Herman G. Pietrolungo, designer, (Continued on page 392)



LIBRARY COMFORT

We at Sjöström of Philadelphia know that Johnny and Jane can
and like to read. That's why our "New Life" library furniture includes
quality-comfort juvenile items of inherent beauty,
seen here at San Diego Public Library.

John E. Sjöström Company, Inc.
1717 NORTH TENTH STREET, PHILADELPHIA 22, PA.



In keeping with the historical significance of Valley Forge and with a desire to provide Americans of 1956 with homes styled in the manner of the late 18th century, McClatchy Building Corporation is developing at Valley Forge, Pa. 400 homes in the \$27,000 to \$40,000 price range.

Each home, an authentic stone colonial, combines contemporary planning with traditional graciousness. Both conventional and split-level designs are featured. The top quality of McClatchy construction assures dwellings of permanence and distinction.

Each of these homes features three bathrooms and a powder room—all equipped with AllianceWare fixtures. Bathroom fixtures are in color—powder room fixtures in white.

Like thousands of developers of fine homes all over the country, McClatchy Building Corporation finds that Alliance-Ware fixtures—porcelain-on-steel—provide outstanding construction and sales features vitally important to home buying prospects. If you are not acquainted with the many special and exclusive features of Alliance-Ware, write for the Alliance-Ware catalog that gives full details.

ALLIANCEWARE, INC. • Alliance, Ohio
Bathtubs • Lavatories • Closets • Sinks
Plants in Alliance, Ohio; Colton, California; and Kilgore, Texas







For security reasons, overall photos of the new SAC control building must remain restricted. However, a portion of the building is shown under construction. Evident here and opposite are Ceco Steel Reinforcing Bars, which make the headquarters a steel-ribbed buttress against attack. U. S. Corps of Engineers and Leo A. Daly Company, joint architects-engineers. Robert E. McKee, Inc., general contractors. Construction photos by Corps of Engineers. B-52 Jet bomber photo courtesy Headquarters, SAC.



HIDDEN FINGERS OF STEEL

that give Strategic Air Command Headquarters the strength of an Impregnable Fortress...

In this Atomic Age, our armed forces buildings must be more destruction-proof than ever—must be able to meet tests beyond the stretch of man's imagination. So reasoned the United States Corps of Engineers and Leo A. Daly Company, joint architects-engineers, in planning the new Strategic Air Command control building at Offutt Field, Omaha. That's why Ceco Steel Reinforcing Bars were assigned to duty at SAC headquarters... called up to guard the nerve center of America's long-range all-jet striking force. So today TOP SECRET hundred tons of hidden fingers of steel add tensile strength to concrete walls TOP SECRET feet thick...roofs and floors varying from TOP SECRET to TOP SECRET feet in depth.

But there's nothing "top secret" about why Ceco Steel Reinforcing Bars were chosen for this vital project. The architects, engineers and contractor all knew they could depend on Ceco's engineering and fabrication. Ceco's reputation for service was a factor. SAC is prepared day and night to deliver nuclear knock-out weapons against an enemy anywhere in the world. And this combat readiness demands the same all-out effort from suppliers.

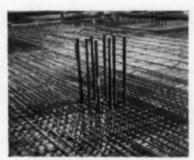
"We can't say too much in appreciation for the cooperation and good service given to us by the Ceco organization on this job," said Carl Taylor, McKee superintendent. "The fabrication of the steel and timing of deliveries has been of great help to our progress. We certainly give all credit to suppliers like Ceco, who know their business and demonstrate that fact consistently, delivery after delivery."

On your next building project, let Ceco Steel serve you, too, just as it has served Armed Services suppliers and thousands of other customers for 44 years. Consult Ceco engineers in the pre-planning stage... not only for better construction, but to cut time, material and labor costs. CECO STEEL PRODUCTS CORPORATION—offices, warehouses and fabricating plants in principal cities—general offices at 5601 West 26th Street, Chicago 50, Illinois.



Windows, Screens and Doors / Ceco-Meyer Steelforms / Concrete Reinforcing Steel Joists / Metal Roof Deck / Metal Lath

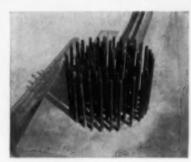
IN CONSTRUCTION PRODUCTS CECO ENGINEERING MAKES THE BIG DIFFERENCE



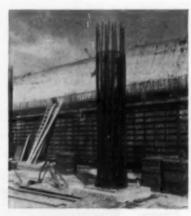
Typical installation of Ceco Steel Reinforcing Bars for column and floor construction at new SAC central haliding.



Ceco Steel Reinforcing Bars in one watt of new SAC control building.



Typical arrangement of Ceco Steel Reinforcing Bars embedded in foundation for a column in new SAC control building.



Ceco Steel Reinforcing Bers and Spiral are shown here in place, ready for forming and pouring of sencrete column.

(Continued from page 388)

has become associated with the Caldwell firm as a junior partner.

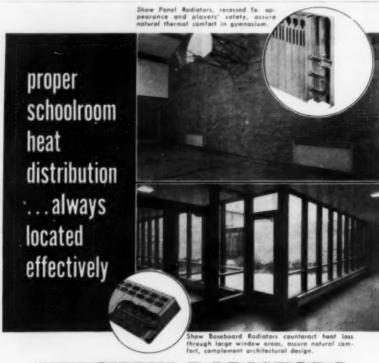
- Gerald J. Spolter, civil and structural engineer, has opened offices at 1205 Lincoln Road, Miami Beach, Fla.
- The Rust Engineering Company of Pittsburgh and Birmingham announces it has opened offices at 1065 Main Street, Waltham, Boston, Mass.
- John Hans Graham & Associates, Architects, of Washington, D. C., and Milton Schwartz, Architect, of Philadelphia, announce their association for professional practice with main offices in Washington, D. C. and branch offices in Philadelphia and Palm Beach, Fla. The firm's headquarters are at 2000 K St., N.W., Washington 6, D. C.
- The firm of Blakewood Associates, Architects and Engineers, has been established with offices at 855 Commerce Building, Baton Rouge, La. Principals in

the firm are Eldred Blakewood III, Architect, and E. G. Blakewood, Jr., Engineer.

- David L. Leavitt, Justin Henshell, and Thomas M. Kawai, all members of the American Institute of Architects, announce the formation of a partnership for the practice of architecture. Offices are at 31 E. 38th St., New York 16, N. Y.
- Clifford G. Hines, Jr. has opened an architectural office at 5240 Nebraska Ave., N.W., Washington 15, D. C.

Firm Changes.

- Carl W. Larson has received a permanent appointment as New York State Architect. Announcement of the appointment was made by John W. Johnson, State Superintendent of Public Works. Mr. Larson has been occupying the post as Acting State Architect since August, 1955.
- George L. Walling, Architect, announces that his firm has been incorporated, and will be known hereafter as Walling, Bickley & Sharp, Inc., Architects-Engineers. Offices are at 1912 N. Street, N.W., Washington, D. C.
- Charles McCreight, A.I.A., and O. B. Riley, Architect, have been made associates in the firm of James & Du Rout, Architects, Sumta, S. C.
- The engineering firm of Charles Yoder, Milwaukee, Wis., has undergone reorganization and expansion. The new name of the firm is Charles W. Yoder & Associates, Consulting Engineers. The following staff men have been named associates in the firm: Paul E. Meves, highways division; Robert E. Schloemer, bridges division; Robert W. Watson, structures division. The firm will continue its location at 3505 West Center Street, Milwaukee 10, Wis.
- Williams, Coile & Blanchard, Architects and Engineers, announce the election of Luther E. Warner, A.I.A., Walter S. Grant, Jr., engineer, Eugene A. Groshong, architect, and J. Simpson Jarvis, engineer, as associate members of the firm to form Williams, Coile & Blanchard and Associates, Architects-Engineers.
- Richard L. Mann, formerly a captain in the Navy Civil Engineer Corps, has joined the staff of Gamble, Pownall and Gilroy, Architects, of Fort Lauderdale, Fla. His post will be coordinator of (Continued on page 396)



with SHAW RADIATORS

The rooms above, part of a recently completed Shaw school installation, demonstrate the successful application of two important rules for room occupant comfort: properly designed heat distribution units, and correct unit location.

Only Shaw has the radiator design standard that answers these requirements correctly. Shaw's exclusive, AIR-e-ATED Radiant Heat, a combination of radiant and convected heat, is rivalled only by Nature at her best. It is distributed evenly, in unvarying proportions, eliminating temperature extremes within the room.

Proper location under window areas or against cold walls is always possible because of Shaw's choice of models and wide range of sizes. Choice of same end or opposite end tapping further simplifies location, and offers opportunities for reduced piping costs. All models—baseboard or panel—are only 3" thick, operate on steam or hot water up to 150 psi.

Find out today how Shaw's exclusive advantages in design and construction can help you get the correct answers to your room heat distribution problems. Write for free literature, or contact the Shaw-Perkins Representative near you.

Write for new Shaw brochure "Solving Modern Room Heat Distribution Problems"



SHAW-PERKINS MANUFACTURING CO. 201 EAST CARSON ST., PITTSBURGH 19, PA.

SEAPORCLAD

INSULATED-LAMINATED PORCELAIN PANELS



Public School 189, Queens, New York City.

Architect

Michael L. Radoslovich, Chief Architect, Board of Education, City of New York. General Contractors I. G. K. Const. Co. New York City.

A SIGNIFICANT TREND IN SCHOOL DESIGN.

Modern SEAPORCLAD porcelain metal panels, now in use throughout the country, provide a Curtain Wall of permanent color beauty.

Being light in weight, the ease of erection, means economical installation. With an over-all thickness of only 1½" to 3" this type of SEAPORCLAD panel replaces 12" to 14" brick and masonry walls resulting in greater usable floor space . . . a vital need in schools today.

Add to this the further advantages of excellent insulating value, weather and fire resistance . . , strength and durability . . , and you have the basic reasons why SEAPORCLAD is specified for so many schools, other types of new buildings and for remodeling old buildings as well.





Massachusetts Institute of Technology, Auditorium Building Cambridge, Mass

Architect: Eero Saarinen, Bloomfield, Mich. General Contractor: George A. Fuller Co., Boston, Mass

Fontbonne Academy (Girls' School), Milton, Mass.

Architect: Chester F. Wright Beston, Mess. General Contractor: M. S. Kelliher Co., Boston, Mass.

Write for brochure 102



for some job somewhere you can use...

SEAPORCEL METALS, INC., 2800 Borden Avenue, Long Island City 1, New York
— Member: Porcelain Enamel Institute, A.F. of L. Metal Fabricating & Enameling
Plant — In Canada: Seaporcel is manufactured by General Steel Wares, Ltd.,
London and Toronto, Onterio. Complete erection and engineering departments.

*Reg. U.S. Pat. Off.





ASSOCIATED ARCHITECTS AND ENGINEERS: Hellmuth, Yamasaki & Leinweber, Architects . . . John D. Falvey, Mechanical & Electrical Engineer . .

In one of the world's 20 largest buildings...

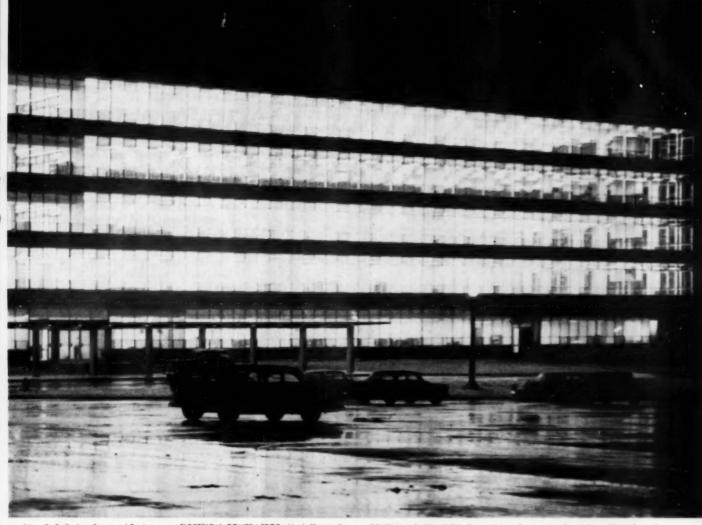


OF COMMERCIAL AND INDUSTRIAL
LIGHTING EQUIPMENT

The U. S. Department of Defense Military Personnel Records Center at St. Louis is one of the 20 largest buildings in the world. With more usable square feet of floor space than the Empire State Building, it is second only in size to the Pentagon among all government buildings.

It is lighted by 19,000 Day-Brite fixtures, especially located to provide proper intensities of vertical lighting of the 21,000,000 records on file... Specify Day-Brite on all original and relighting installations. Your Day-Brite representative will show you why lighting by Day-Brite makes the big difference. You'll find him in your classified phone directory.

Day-Brite Lighting, Inc., 5465 Bulwer Ave., St. Louis 7, Mo.



Wm. C. E. Becker, Structural Engineer . . . ELECTRICAL CONTRACTOR: Mack Electric Co. . . . GENERAL CONTRACTOR: Fruin-Colnon Contracting Co. & Peter Kiewit Son's Co.

lighting by Day-Brite makes the $\underline{\text{big}}$ difference





Typical corridor area lighted with Day-Brite fixtures. Note uniform illumination over entire corridor length.

Huge record-storage area, especially arranged for vertical lighting of files with Day-Brite fixtures.

administration and planning, and he will be responsible for the administration of production progress and financial analysis with the firm's clients and for coordination of design and plans within the firm.

 Curtis Green, Minneapolis architect, has been elected president of Hammel and Green, Inc., a St. Paul architectural firm which was recently incorporated. Richard Hammel, St. Paul, architect, was elected treasurer; and Rolf Irgens, also a St. Paul architect, was named secretary. Newly-elected vice presidents, all of Minneapolis, are Bruce Abrahamson, George F. Klein, Jr., and Hugh G. S. Peacock.

 The firm of Parochial Architects, 1838 St. Clair Ave., St. Paul, Minn., is now known as Voight & Fourre, Architects. Offices will be at the same address. New Addresses.

Waldron & Dietz, Architects, 215 Eighth Ave., Seattle 9, Wash.

John Brewer and Associates, Architects, 97 W. Lynwood St., Phoenix, Ariz.

Kenneth E. Jackson, Architect, 46 Third Street, Presque Isle, Maine

Howard R. Meyer and Associates, Architects, 2909 Fairmount St., Dallas, Texas

D. N. McIntosh, Architect and Engineer, C. H. Moeller, W. M. Smale, Associates, 512 Piggott Bldg., Hamilton, Ont.

Marcel Breuer and Associates, Architects, 201 E. 57th St., New York 22, N. Y.

Samuel Glaser and Associates, 234 Clarendon St., Boston 16, Mass.

CORRECTIONS

Charles Sax, one of the prize winners in the Morton Arboretum house competition (page 16B, August issue) was listed erroneously as a student at Harvard University. Mr. Sax is a student at North Carolina State College.

The Federal Department of Public Works did not form the Canadian Housing Design Council as was stated on page 36 of the July issue. The idea of the council was initiated and put forward by the Central Mortgage and Housing Corp. to a group of private citizens who formed the council.

BUILDING CODES AND COSTS: DENVER EXPERIENCE CITED

The cost situation in Denver was cited by the National Lumber Manufacturers Association as an illustration of how modernization of building codes could save home buyers money.

N.L.M.A. said home construction savings in Denver in 1955 were said to amount to more than \$3.5 million after the building code had been liberalized.

The permit record last year showed that Denver builders erected 2058 homes of wood frame or brick veneered on wood frame, and 1693 of solid masonry. Average costs were given as \$6638 for the frame houses; \$8438 for the frame with brick veneer; and \$9083 for the houses of solid masonry. Denver renovated its code several years ago. Wood frame construction had been excluded before the revisions.

N.L.M.A. conclusion: If Denver's code had not been changed, the homes constructed last year would have cost \$18,692,814 instead of the \$15,154,200 they did cost.

(More news on page 400)



CUSTOM-BILT BY SOUTHERN

Food service equipment designed, engineered, fabricated and installed in any type operation, expertly fitted to available space. You can depend on thorough cooperation by your Southern Dealer, from initial analysis of your food service problems through complete installation and reliable maintenance for the years to come. Get expert help with your next kitchen equipment problem or layout—call your "Custom-Bilt by Southern" dealer, or write Southern Equipment Company, 4550 Gustine Ave., St. Louis 16, Missouri.





"CUSTOM-BILT BY SOUTHERN" DEALERS: ALABAMA, BIRMINGHAM—Vulcan Equip. & Supply Co.; MOBILE

Mobile Fixture Co. ARKAMSAS, LITTLE ROCK—Krabs Bros. Supply Co.; TEXARKANA—Buckelew Hdwe.
Co. COLORADO, DENVER-Carson Hotel Supply, PLORIDA, DAYTONA BEACH—Ward Morgan Co.; JACKSONVILLE—Wm. M. Morgan Co.; MIAMI—Jack Conkle, Inc.; ORLANDO—Turner-Hasek Co.; TAMPA—Food
Service Equip. & Engr. Corp. Halmoots, PEDRIA—Mettal's Equip. Co. IMDIAMA, INDIANAPOLIS, MARION—
National China & Equip. Corp. 160WA, DES MOINES—Bolton & Hay. KAMSAS, WICHITA—Arnholz Coffee &
Supply Co. KENTUCKY, LEXINGTON—Heilbron-Matthews Co. LOUSSIAMA, NEW ORLEAN—J. S. Waterman
Co., Iss.; SHREVEPORT—Buckelew Hdwe. Co. MICHIGAN, BAY CITY—Kirchman Bros. Co.; DETROIT—
A. J. Marshall Co. MINNESOTA, MINNEAPOLIS—Astesan Company, MISSOURI, KANSAS CITY—Greenwood's
Inc. MONTANA, BILLINGS—Northwest Fixture Co. NORTH
DAKOTA, FARGO—Fargo Food & Equip. Co. OHIO, CINCINNATI—M. Leuber & Co.; CLEVELAND—S. Kemp
Co.; COLUMBUS—General Hotel Supply; TOLEDO—Rowland Equip. Co. OKLAHOMA, TULSA—Goodner Van
Co. PENNSYLVANNA, ERIE—Arthur F. Schultz Co. SOUTH CARGLINA, GREENVILLE—Food Equipment Co.
TENNESSEE, CHATTANOOGA—Mountain City Stove Co.; KNOVILLE—E. Carleton Services; MEMPHIS—
House-Bood Co.; MASHVILLE—McKey-Cameron Co. TEXAS, AMARILLO—Arnholz Coffee & Supply Co.,
CORPUS CHRISTI—Southwestern Hotel Supply, Inc.; EL PASO—El Pasa Hotel Supply Co.; SAN ANTONIO—
Southwestern Hotel Supply, Inc. UTAM, SALT LAKE CITY—Restaurant & Store Equip. Co. OVERGINIA, RICHMOND—Ezskiel & Weiman Co. WEST VIRGINIA, CLARKSBURG—Parson-Souders Co. WISCOMSIDI, MILWAUKEE—S. J. Casper Co.

Early Tile-Tex floors still going strong after a quarter century of hard service

...and today's Tile-Tex
H. M. W.
(Higher Molecular
Weight)
Asphalt Tile
is even better!

You're looking at some of the very first asphalt tile floors installed anywhere. You can imagine the hard wear they have received in a school, a Y.M.C.A., and a church during all these years. The above floors are still in use and are giving satisfactory service. These photographs were taken late in 1955.

Tile-Tex, in addition to being the pioneer manufacturer of asphalt tile, was the first to make vinyl tile commercially. There are many Flexachrome vinyl-asbestos tile floors throughout the country which are still in use after over 15 years of service.

For the complete line of asphalt, greaseproof, and vinyl-asbestos floor tiles in color—see our catalog in SWEET'S Architectural and Light Construction Files. Or call your local Tile-Tex Contractor...he's listed in your classified telephone book. Or write:

THE TILE-TEX DIVISION, THE FLINTKOTE COMPANY
1234 McKinley Avanue, Chicage Heights, Illinois

In the 11 Western states: Pioneer Division, The Flintkote Company, P.O. Box 2218, Terminal Annex, Los Angeles 54, California. In Canada: The Flintkote Company of Canada, Ltd., 30th Street, Long Branch, Toronto.



Over 30 years ago in 1925, the Tile-Tex Asphalt Tile floor pictured above was installed in the Jesse G. Spaulding School for Crippled Children, Chicago, Ill. Photograph used by permission of Board of Education, City of Chicago, John C. Christensen, Architect.



First Congregational Church of Chicago. Picture shows Tile-Tex Asphalt Tile floor installed in 1932 in one of the nursery rooms.



In 1930, this Tile-Tex Asphalt Tile floor was installed in this Y.M.C.A. on Bowery Street in Akron, Ohio.



TILE-TEX...Floors of Lasting Beauty

Manufacturers of Flexachrome *... Tile-Tex *... Tuff-Tex *... Vitachrome *... Holiday *... Mura-Tex *... Korkolor†
... Holiday Flexachrome *... and Modnar *, the "plank-shaped" asphalt tile.

FAST COFAR® CONSTRUCTION HELPS FORD MEET RIGID SCHEDULING ON NEW PLANT

Triple-duty Cofar provides considerable savings for Ford Motor Co. on cost of floors by combining form and reinforcement in one operation

You can't mass produce cars in a half-finished plant! That's why Ford demands on schedule completion of its new Lincoln Assembly Plant in Novi, Mich. Helping Ford meet the mid-1957 deadline is Cofar—a product originally specified for economy—and now proving itself an outstanding timesaver, too!

Deep-corrugated Cofar steel units (with transverse wires welded across corrugations) completely eliminate wood forms ... make concrete floor and roof construction a one-step operation. Cofar offers in one product all the positive and temperature steel needed in the structural concrete slab.

Architect's on-the-job representative,

Harold G. Haddon of Smith, Hinchman and Grylls, Inc., Detroit, says, "Working with forms seems so outdated now. Metal forms, such as Cofar, are among the most timesaving products we have in construction today. They immediately follow structural steel erection, eliminate the cost of forming and provide a good platform for working trades. Workmen can move in immediately, can start placing on the second floor while there's still activity on the first . . . and there's no danger of falling materials. Our jobs seem to go twice as fast now!"

Consider the advantage of an immediate working platform: In the Lincoln Plant at Novi, Mich., there are over 50 underground machinery pits. Workmen safely poured these pits at the same time Cofar was being placed on the floor above! Consider the time saved with no wood forms to cut, fit, remove, repair and store. Doesn't it make sense to use a product that saves you time, work, money and speeds occupancy. Cofar does them all! For more facts, consult district or home office. ATTN: Dept. R-66.

See our listing in Sweet's Architectural File and

GRANCO® STEEL PRODUCTS CO.

A Subsidiary of GRANITE CITY STEEL COMPANY

6506 N. Broadway, St. Lauis 15, Missouri Executive Offices: Granite City, Illinois

DISTRICT OFFICES: St. Louis • Kansas City • Cincinnati Dallas • Chicage • Minneapolis • Atlanta • San Francisco Distributors in 80 principal cities

On-the-job photos show COFAR advantages



EASY TO PLACE. Each Cofar unit can cover up to 35 sq. ft. and weighs only 2 lbs. per sq. ft. Cofar placing quickly follows structural steel erection. Units arrive at the job site conveniently bundled and cut to fit the building frame.

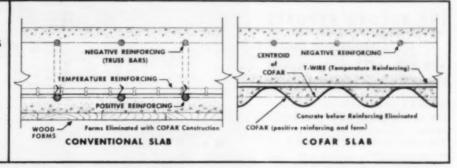


A SAFE WORKING DECK is ready when Cofar is welded in place. Concrete crews move in days ahead of schedule. Cofar fire-resistance ratings set by Underwriters' Laboratories, Inc. Protective hotdip galvanized conting adds permanence.



REINFORCED CONCRETE design principals are used with Cofar and negative steel is added for slab continuity. Highstrength Cofar units are suitable for steel or concrete frame construction. Attractive underside can be left exposed.

Diagram Shows Comparison of Conventional and Cofar Slab Sections



Read what members of the construction team say about Cofar:



GENERAL CONTRACTOR'S superintendent, Mike Kopko of W. E. Wood Company, says, "Speed is the essence of everything here and that's what Cofar gives us—speed! It covers a lot of area, provides a safe, solid, working platform. Trades come in and proceed with their jobs fast. We're getting nice level floors, too. With Cofar you haven't got the T-shores, forms, clean-up after pouring, loose concrete chipping away beneath and cement patching. This is the first Cofar job for all my men. They like it!"



COFAR ERECTOR, Ray Ewer of Capitol Erection and Welding Company, says, "Ford is very happy with Cofar. Cofar was here in plenty of time. The sheets handle easily and placing is fast. Cofar 'cuts in' nicely and takes a lot of beating. I had visions of needing something to plug leaks but we've had no trouble with pour leaks or concrete finishing. We're going a little faster all the time."



(Continued from page 396)

NEW B.B.C. TELEVISION CENTER PLANNED FOR LONDON SITE

A new TV center will be erccted in London soon to house the British Broadcasting Corporation's television studios. The center is expected to be ready for occupancy in *960.

Architect for the work is Graham Dawbarn, F.R.I.B.A., in association



B.B.C. Television Center is under construction in London. Photo of model shows nine-story ring structure which is main block. Radiating from the ring will be studios, telecine and telerecording facilities

ILLUSION SIDE-BY-SIDE

"The Cleveland"
A-15000 SERIES

2,3 OR 4 LAMP LUMINAIRES

- The Cleveland 15000 Series is a classically simple luminaire created especially for surface mounting. Its softly diffused lighting and low lines give it a built-in custom look.
- Flexible end-to-end, side-by-side and individual mounting make possible patterns and banks of unlimited variety.
- One-piece "dished" Acrylic or Polystyrene plastic is held in a rigidized steel channel closure equipped with fulllength piano hinges. Spring latches are easy to operate, foolproof and inconspicuous.
 - The Cleveland is available in 2, 3 and 4 lamp units wired complete, ready to install. Finished in all white, baked-on enamel. U. L. listed.

Write for Cleveland Specification Sheet.

PITTSBURGH REFLECTOR COMPANY

402 OLIVER BUILDING, PITTSBURGH 22, PA.

FLUORESCENT



INCANDESCENT



IN CANADA
Pittsburgh Reflector of Canada, Ltd.
105 Tycos Drive, Toronto

REPRESENTATIVES IN PRINCIPAL CITIES

WHOLESALERS EVERYWHERE

with M. T. Tudsbery, consulting civil engineer to the B.B.C.

A 13-acre site was chosen for the center, which itself will only cover about 3½ acres and involves planning of just over half of the entire site. The remainder of the site will be left unplanned until B.B.C. is in a position to judge how the site should be developed to best meet the demands of service.

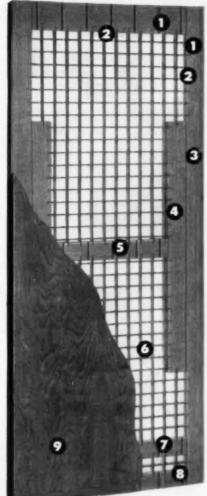
The architectural conception of the half-site scheme had, however, to take into account the development of the site as a whole. A curvilinear "tail-piece" (see photo of model, above) was employed in the design to provide a measure of flexibility in the planning of the second half of the site. It is envisaged that the "tail-piece" will provide further studios, a large garage, rehearsal rooms, and possibly a roof heliport.

The main studio block will consist of a multi-story ring providing accommodation for dressing-rooms, wardrobe service, engineering, and offices. The ring encircles a garden of 150-ft diameter. Studios radiate from the ring. The periphery of the studios will be enclosed by a continuous runway for easy conveyance of scenery and props.

The scenery block itself covers approximately one acre, and is the first part of the project to be completed. Extensive workshops are provided for carpenters, property-makers, and scenic artists. There is a high (26 ft) setting-space where scenery is assembled, together with large storage areas for re-usable props. The scenery block building also contains 200 offices for the use of administrative staff, producers, etc.

(More news on page 402)





here's why



INSTITUTIONAL DOORS

are specified for America's finest schools by leading architects:

- Proven dimensional stability . . . lightness . . . strength for the hardest possible use by active youngsters of all ages.
- Built for use with special hardware. Convenient to specify—no need to write detailed specifications.
- Backed by over 8,000,000 successful REZO installations including schools and public buildings coast to coast!

check these exclusive features

- 1. One rail is 5" wide and can be used as either top or bottom of the door. Stiles are 3" (nom.).
- 2. Air-vented, all-wood gridwork is carefully mortised into the stiles and rails for greater strength.
- 3. Matching vertical edge strips can be furnished and finish not less than 1/2" wide after trimming.
- 4. Lock area is 6¾" wide and 21" from either end and varies in length proportionate to door height.
- 5. 3" rail for special hardware is 41" from bottom of door to top of rail unless otherwise specified.
- 6. Heavy duty $2'' \times 2''$ air cell all-wood gridwork interlocked for strength and dimensional stability.
- 7. 3" rail for kick plate located 10" from bottom of door to top of rail unless otherwise specified.
- 8. Vent grooves in top and bottom rails help keep moisture content in balance prevent warpage.
- 9. Hand-matched hardwood face veneers, 3 ply, of any commercial species. Sanded to cabinetmaker's finish.



Lightweight — easy one man installation

Resists Abuse — for lifetime service

Convenient - easy to open and close Cost? Less expensive than solid core doors yet they're better in every respect! Architects who want America's finest Institutional Doors always specify REZO. For full details, see Sweet's Catalog or write:

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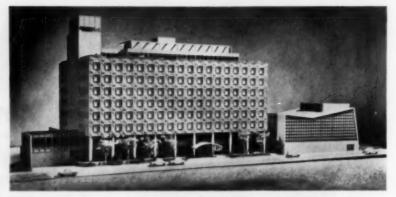
401

(Continued from page 400)

FASHION COLLEGE PLANNED FOR N. Y. GARMENT AREA

The Fashion Institute of Technology
— a community college where students
of the fashion industry can train for
executive positions—will be constructed soon in the heart of New York
City's garment district.

Designed by architects DeYoung, Moscowitz & Rosenberg, New York



Waterproofing approach walls Patapaco Tunnel between Baltimore and Brooklyn, Md. Waterproofing by Anchor Waterproofing Corp., New York City and Railroad Waterproofing Corp., Lynbrook, N. Y. joint venture.



"Karnak completely waterproof...
never known to deteriorate."

That's what George Knight, superintendent of waterproofing for Patapsco Tunnel, says. He adds, "Karnak waterproofing mesh is one of the easiest-to-handle waterproofing materials...light-weight, durable and long-lasting...I've never known it to deteriorate, crack, or fail to do the job."

Karnak is the open-mesh, asphaltsaturated cotton cloth that's layered on the job with alternate moppings of highly refined, ductile asphalt. The open mesh allows the mopping asphalt to penetrate and interlock the layers, providing a firm membrane that maintains water proofing through the life of the structure. Karnak fabric is also available in tar and pitch saturation. Karnak has met tough waterproofing requirements for over 30 years on dams, tunnels, bridges, swimming pools, viaducts and building foundations. Specify Karnak on your next waterproofing job. Manufactured by Lewis Asphalt Engineering Corp., 30 Church Street, New York 7, N. Y. Dept. 112.

C L.A.E. Corp.





Asphalt Roof Coatings and Cements Calking Compounds * Asphalt Emulsions * Tite Cement * Asphalt Paint Wood Block Mastic * Joint Filler Aluminum Asphalt Coating



Two tones of blue aluminum will sheath new Fashion Institute of Technology planned for New York City. Auditorium and main building will be integrated, with passageway leading from second floor of main building to auditorium

City, the Institute will be sheathed in anodized aluminum. Two tones of blue will be used, accented with gold trim.

The nine-story structure will contain 35 academic units where 1250 full time students and 3000 part time students will be accommodated. In addition, it will provide 40 technical laboratories, a gymnasium, a fashion library, industrial seminar rooms for executives in the industry, and extensive exhibit areas. An 800-seat auditorium will stand adjacent to the main building.

The first, second, and ninth (top) floors of the main building will be set back ten feet from the building line. These three floors will be sheathed in glass and natural aluminum. The open areas of the roof will be landscaped, with trees and shrubbery. A courtyard and campus will complete the setting for the Institute.

The more rigid form of the main building will be relieved by the freeflowing lines of the auditorium. Though integrated with the main building, it is to be set forward to the building line.

First floor of the main building will be devoted largely to exhibit areas, including a glass enclosed room in which will be displayed the industry's latest fabric designs.

"Before setting one line on paper," said Benjamin Moscowitz of the architectural firm who designed the Institute, "we spent weeks watching the students and faculty at work. We were intrigued by the tremendous possibilities. The challenge before us was to create an atmosphere and background consistent with the good taste and atmosphere of the school itself."

(More news on page 406)

Lower over-all costs, availability of materials, and flexibility of design are cited by Hausner & Macsai, Architects and Engineers, as major considerations in their selection of reinforced concrete for this new luxury apartment for Chicago's Lake Shore Drive. Their imaginative treatment of reinforced concrete is dramatically demonstrated in the soaring lines and curved design.

On many other important apartment buildings and public housing projects from coast to coast, reinforced concrete is also providing better structures for less money. It is a flexible medium, inherently firesafe, and highly resistant to wind, shock, and quake. On your next job . . . design for reinforced concrete.

REINFORCED CONCRETE

provides flexibility of design for this curved luxury apartment

New quarter-circle, twenty-four story, reinforced concrete apartment for Chicago's fashionable Lake Shore Drive.

> Owners: John J. Mack* Raymond Sher*

Architect:
Hausner & Macsai*
Structural Engineer:
Paul Rogers & Associates*
Mechanical Engineer:
William Goodman*
General Contractor:
Crane Construction Co.*
*Chicogo, Illinois

Compare...

REINFORCED CONCRETE

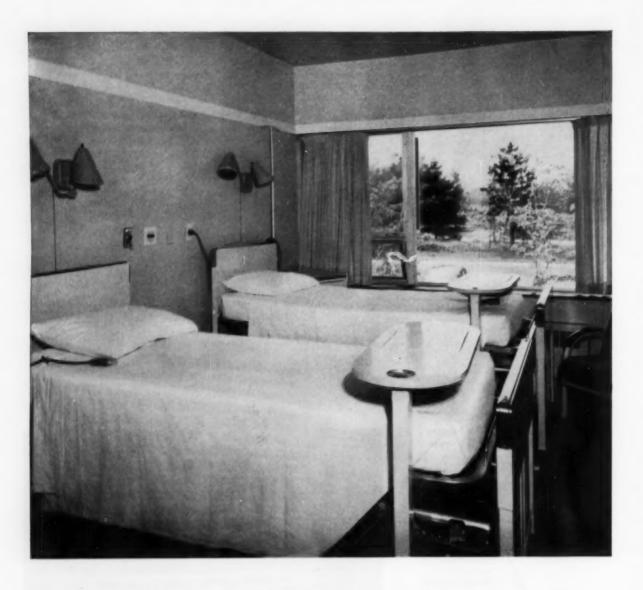






CONCRETE REINFORCING STEEL INSTITUTE

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Modern Hospitals Choose Latex Paints

These durable, easily applied paints cut time and labor costs . . . bring lasting client satisfaction



It's easy to see why more and more architects and specifications engineers are turning to latex paints for heavy as well as light construction work. These paints are quickly and easily applied, dry so fast they can be recoated the same day to help finish the job ahead of schedule. Their lack of painty odor means painted rooms can be occupied right away. Cleanup is a breeze because latex paints can be washed out of the equipment with ordinary tap water.

Latex paints dry to a scrubbable, durable film for a maximum of client satisfaction. Leading paint manufacturers make latex paints in a wide range of colors and in texture and specialty paints. For further information write Dow Plastics Sales Department PL582R-1. THE DOW CHEMICAL COMPANY, Midland, Michigan.

Here's how Latex Paints are used...

ON PLASTER SURFACES. This is the most common application of latex paints. Because they have excellent resistance to alkalinity, they can be safely applied right over fresh plaster. No need to wait days for the plaster to cure completely. If suction or overgauging occurs in the plaster, latex paints still dry with a uniformity of appearance.

In most cases, two coats of latex paints are used on fresh plaster. The first acts as a sealer. Because latex paints dry rapidly the second coat can be applied the same day. From the application of plaster to completed paint job is days shorter with latex paints than with many other kinds of paint!





FOR EXTERIOR MASONRY. Exterior masonry paints are durable, self cleaning, resistant to alkali and stain. Used on cinder block, cement block, stucco and similar masonry surfaces.



FOR INTERIOR BLOCK. Latex paints have excellent sealing properties over einder block, concrete block, as well as many other porous surfaces.



FOR DRY WALL CONSTRUCTION. Latex paints give the same excellent results—a smooth, colorful surface that's washable and has outstanding durability!

you can depend on DOW PLASTICS



(Continued from page 402)

DENVER PLANT FITS SCHEME FOR DECENTRALIZATION

A new electronics plant, designed by Pereira and Luckman, Architects, for the Ramo-Wooldridge Corporation, is under construction near Denver, Colo. Location of the production facility at Denver is in keeping with federal plans for industrial decentralization, a company spokesman said.



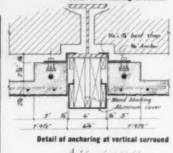


DESIGNED WITH THE FUTURE IN MIND

Selected for its distinctive appearance, long life, and minimum maintenance, Mo-Sai precast facing gives a decorative effect to the exterior of this new school building. The section of spandrels between the windows is green Mo-Sai with diagonal false joint scoring.

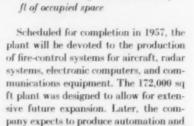
Unlimited in color range, available in standard or coarse surface texture, variable in size as required by the design — Mo-Sai fulfills the need of flexibility for the architect.

Consult your nearest Mo-Sai Associate Manufacturer for details, specifications, and samples of this versatile, economical facing material!





Northwest Classen High School, Okiahoma City Architect: Hudgins, Thompson-Ball & Associates, Okiahoma City Mo-Sal by Harter Marblecrete Stone Co., Okiahoma City



under construction in Denver, will total 172,000 sq.ft. The new plant is part of a building program recently initiated by the company. When complete, the program will give Ramo-Wooldridge over a million sq

Since its organization in 1953, Ramo-Wooldridge has worked in the research and development of guided missiles and electronic systems. The new Denver plant is the firm's first major venture in electronics manufacturing.

data processing equipment for commer-

cial clients.

A 640-acre site located in Englewood, just south of Denver, was chosen "because of its proximity by air to Los Angeles and because of Denver's attractiveness to live in," according to Dr. Dean E. Wooldridge, president of the Los Angeles company. The Denver plant will ultimately employ around 1500 persons.

Ramo-Wooldridge now occupies eight buildings in the vicinity of the Los Angeles International Airport. The company is engaged in a building program which includes the Denver facility and a complex of nine research and development buildings totalling 900,000 sq ft near their present Los Angeles head-quarters. Construction has recently been completed on a flight test facility on a seven-acre site at the Los Angeles airport. When completed, the building program will bring the total space occupied by the firm to a million and a half sq ft.

(More news on page 410)



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Junior Beams as roof purlins speed erection of ultra-modern A. M. Castle & Co. steel warehouse

Two hundred tons of 10" lightweight J&L Junior Beams are used as roof purlins in the new \$4,500,000 Franklin Park, Ill., warehouse of A. M. Castle & Co., nationally known steel distributor.

Erection is simple and fast. Junior Beams are cut to length and punched for bolts prior to arrival on the job.

Their light weight makes them easy to raise and position. Connections are made with end plates and high tensile bolts.

This ultra-modern warehouse provides an outstanding example of



one type of structure where J&L Junior Beams are employed to advantage. Other applications include almost every type of light occupancy buildings. Architects and builders use Junior Beams to develop functional, permanent, safe structures that are low in over-all costs.

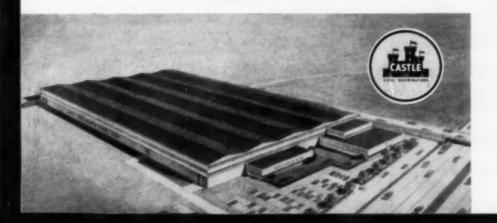
Find out more about them today. Write for a free copy of our technical literature on J&L Junior Beams.

Jones & Laughlin

STEEL CORPORATION PITTSBURGH



The Junior Beams are installed on 8' centers over 24' spans. To save steel, 9 lb., 10" Junior Beams are cantilevered beyond the main trusses.



Over 2,200 tons of structural steel, fabricated and erected by Allied Structural Steel Companies, are being used in this new \$4,500,000 steel warehouse at 3400 North Wolf Road, Franklin Park, Illinois.

ARCHITECT AND BUILDER: Clearing Industrial District, Inc. Architect, J. S. Cromelin

FABRICATORS: Gage Division Allied Structural Steel Companies ERECTORS: Industrial Construction Co.

Division of Allied Structural Steel Companies





312 pages, 83/4 x 115/8 Over 900 illus., \$9.75

TESTED, IN-USE SOLUTIONS TO TODAY'S SCHOOL DESIGN AND CONSTRUCTION PROBLEMS

Here, in 312 pages and over 900 illustrations, is a fully-detailed, vivid cross-section of new school buildings which best demonstrate today's sweeping advances in concept and design. These new schools, 66 in all, were selected from all parts of the country to present a wide geographic and climatic variety.

Amazingly, today's pressing need for economy has resulted in better schools than were dreamed possible just a few years ago. Shorn of architectural whimsy, gingerbread and inefficient space, these new schools for today's new needs are working proof that sound planning can pay off in better buildings and lower cost.

This vital new book is divided into 3 extensive sections: Cost Studies, Elementary Schools, Secondary Schools. Each section contains over 20 complete case studies and is profusely supplied with interior and exterior photographs, plans, charts and diagrams. Among the hundreds of diverse and pertinent topics discussed are comparative costs, expandability, flexibility, maintenance and operating costs, quality values, architectural economies, orientation, and rehabilitation. Although an entire section is devoted to cost studies, special attention to costs and economical design is included in every case study in the book.

Schools for the New Needs gives a new insight into the problems and solutions of planning better schools at less cost. Its absorbing test is refreshingly clear of the involved technical jargon usually associated with works in this field.

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THE RECORD REPORTS

(Continued from page 406)

CURVED APARTMENT DESIGN ADDS MORE LAKE FRONTAGE

An apartment building with a completely curved shape and a convex façade facing Lake Michigan will soon be built in Chicago.

Designed by architects Hausner and Macsai, Chicago, the building will be located at 1150 Lake Shore Drive, and will house 250 apartments. The 24-story building will be constructed of reinforced concrete and will have diaphragm walls to compensate for wind loads. In plan, the structure will be a quarter circle, erected on a trapezoid of land. Total lot area is 20,011 sq ft.

The circular design of the building was developed to afford more lake frontage than would be possible with a conventional square design. By curving across the corner of Lake Shore Drive



Curved design of apartment building on shores of Lake Michigan, Chicago, allows 76 ft more lake frontage than could be achieved by conventional square design. Approach to the 220 ft long sweeping arcade will be enhanced by a landscaped area.

and Division, 220 ft of building frontage will face the lake and parkway. A conventional square-shaped building would provide only a possible 144 ft of lake frontage. The curved effect also eliminates an obstructed view from the building to the north.

Curvature of the building will give an appearance of greater depth to the rooms, according to the architects. Forty-four of the apartments will have two bedrooms, 162 will have one bedroom, and 44 will be studio apartments. Some 184 apartments will face the lake.

Outside curtain walls will be of light grey brick. Blue spandrels will divide horizontally the glass windows in front.

Two high speed, electronically operated elevators and one freight elevator will serve the apartments. A three level garage will accommodate 128 cars.

Self-contained air conditioning units will be installed inside the walls of each apartment. Individual tenants will be able to control their own air conditioning at will. The separate unit method of air conditioning will mean that failure of one unit will not effect the operation of the rest of the units in the building. A tenants' laundry, a receiving room for deliveries, free utilities such as gas and electricity, and a free window-washing service will be provided.

The building will be completed in 1957 at a cost, including land, of over \$4,000,000. Prudential Insurance Company of America is financing the project.

Structural engineer for the building is Paul Rogers & Associates; mechanical engineer is William Goodman.

(More news on page 412)

MEADOWS BUILDING



The Door that lets
TRAFFIC through QUICKLY

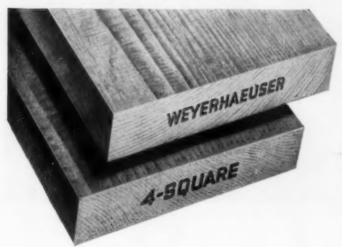
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Announcing an important new development...

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Most important to your clients is the fact that paint lasts longer on Treated Siding. Water-repellent treatment helps prevent water entering behind siding, thus providing longer paint life. Treated Siding also resists the damaging effects of casual exposure to water during construction and prior to painting. Water-repellent treating adds stability to siding as it

retards moisture changes. The treatment also deposits chemicals which resist the development of mold and fungi.

Paint not only lasts longer, it is easier to apply on Treated Siding. The oils in the paint are absorbed slowly. The paint gives added protection because more of its oils are kept on the surface, where they are most valuable for resisting the damaging effects of weather.

Treated Western Red Cedar and West Coast Hemlock Bevel Sidings are now available in the standard widths and

thicknesses.

Weyerhaeuser 4-Square water-repellent Treated Siding offers distinct advantages to home owners. For complete details about these fine products, talk to your Weyerhaeuser 4-Square Lumber Dealer or write to our St. Paul office for full

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THE RECORD REPORTS

(Continued from page '110)

INTEGRATION OF INDUSTRY SOUGHT IN CENTER DESIGN

A center designed to integrate all the segments of the region's construction industry is being constructed this year in Los Angeles.

The new Construction Industry Center is keyed to meet the demands of the industry for some sort of centralization whereby the architect, builder, finan-



Construction Industry Center will have office, exhibition, promotion facilities. Surface and subsurface lots will handle traffic flow

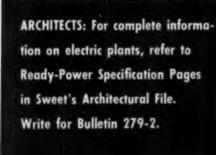


DEPENDABLE POWER PROTECTION



Standby electric plants assure the continuation of vital services when normal power fails. Pictured is a typical example of power protec-tion in a municipal water plant. The Ready-Power standby unit assures an adequate supply of water for fire protection, sanitation, and other essentials during emergencies. A wide range of Ready-Power models up to 100 KW will meet your requirements. Write for information.

The Ready-Power Company, 11231 Freud Ave., Detroit 14, Michigan Gas and Dissel Engine Driven Generators and Air Conditioning Units; Gas and Dissel Electric Power Units for Industrial Trucks





cier, decorator and product manufacturer can work together under one roof.

Architect John C. Lindsay, A.I.A., designed the center, to be built on a site chosen for its accessibility. Its location is at the hub of the Southern California Freeway network, less than a minute away from the giant superhighway cloverleaf which links all sections of Southern California.

The center will act as an all-industry clearing-house for promoting new business, for negotiating contracts, for showing new products and services, reviewing plans, arranging financial transactions, staging sales conferences, and holding meetings of industry groups.

Approximately 150,000 sq ft of sales and administrative offices in the main building will be rented to members of the industry.

The Tower of Exhibits, also 13 floors, is immediately adjacent to the office building. The two structures are connected by glass enclosed bridges at each of the 13 levels. Permanent displays of all new building products will be housed in the elliptical tower.

The center will maintain its own headquarters for promotion. The 3-story Graphic Arts Center, next door to the main building and tower, will serve as a central place of information about the construction industry. It will be made available to the press, TV, radio, and other publicity and public relations channels. A specially equipped press and information bureau with wire, phone and radio facilities for newsmen will serve as a base of operation.

The Building Contractors Association of California is sponsoring the center, which is expected to be ready for occupancy in September, 1957.

(More news on page 416)

Von Duprin

FIRE AND
PANIC EXIT DEVICES



Tough!...Tested!...Trusted!



● Here's the sort of treatment that Von Duprin exit devices absorb every day—year after year. And can they take it! Many of Von Duprin's devices have been in constant service for more than 40 years . . . with just normal maintenance. This durability, performance and precision design have teamed to make Von Duprin the preferred line of exit hardware. You can rely on Von Duprin to serve your daily traffic easily . . . and, most important, to be ready for that once-in-a-lifetime emergency. Von Duprin fire and panic exit devices—"the safe way out!"

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3. Growing agreement that the *best*-place to advertise specifically to architects and engineers is in the one magazine edited specifically for architects and engineers and steadily preferred by them.

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— 6 Months 1956 —

- 1. Electronics
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- 3. Chemical Engineering
- 4. Architectural Record
- 5. Purchasing
- 6. Modern Machine Shop
- 7. Electrical Manufacturing
- 8. Machinery
- 9. Building Supply News
- 10. Factory Management & Maintenance
- 11. Aviation Age
- 12. Practical Builder
- 13. Petroleum Engineer
- 14. Machine & Tool Blue Book
- 15. House & Home

Note: Above rank is not affected by special issues published by Electronics and Architectural Record.

1955

1956

For Fast

DISCHARGE of AIR at HIGH VELOCITY

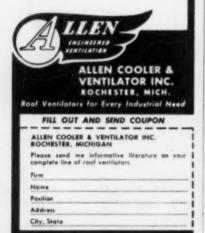


OCCUPATION OF THE PROPERTY OF

 Keeps fumes from leaking back through building openings

Whenever you face the problem of discharging fumes through a roof so that they will not short-circuit back through building openings, you'll find the solution in this Vertical Discharge Fan. It is designed especially for industrial applications that require the removal of a large volume at high velocity. It is fabricated of zinc-coated iron sheet with welded construction throughout. Automatic wing dampers open with air blast, close weather-tight when not operating. Available as "VD" direct drive with motor mounted inside air stream or as "VDR" with motor mounted outside throat of ventilator—both in a wide range of capacities and sizes.

See Sweet's Architectural File, Section 20b or write for catalog.



THE RECORD REPORTS

(Continued from page 412)



FIVE STAINED GLASS PANELS WIN COMPETITION AWARDS

Donald Erik Erikson, Cleveland, took first prize, and Alfred McArdle, Philadelphia, was awarded second prize in the 1956 Apprenticeship Competition sponsored by the Stained Glass Association of America. Mr. Erikson's stained glass panel is shown above; Mr. McArdle's slab glass in concrete panel is below.



(Continued on page 420)

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Closed-Circuit TV Applications Broadened by New Features of GPL ii-TV*

When you specify a closed-circuit television system, make sure it is precision equipment: designed, built and engineered by men who have the highly specialized skills required.

Behind ii-TV* lies GPL's extensive experience in the production of high-performance TV equipment to meet the rigid quality standards of the Armed Services and broadcasting studios. GPL ii-TV's bright, clear pictures, rugged construction and economy—both of first cost and of maintenance—are assets your clients will appreciate for years to come. For in this field nothing is more economical than the best.

The new equipment which has been added to GPL's ii-TV System extends the usefulness of the medium to new areas and makes many existing applications easier. There's ii-TV equipment to fit every requirement. And GPL's skilled application engineers will help you custom-fit it to the buildings on your boards.

*The industrial-institutional TV system made by General Precision Laboratory,



- Basic ii-TV Camera—smaller than a football, weighs only 5 lbs. Shaped to fit into tight places. No special lighting needed; sensitive Vidicon tube picks up quality pictures at low light levels. Plugs into any AC wall outlet.
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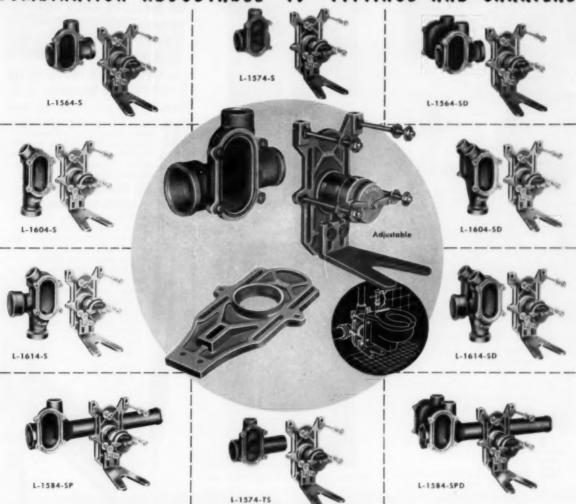
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THE RECORD REPORTS

(Continued from page 416)



Stained glass honorable mention (above) went to Robert W. Anderson, Milwaukee



"Nativity" (above) won honorable mention for Robert Johnson, Milwaukee



Richard Millard, New York City, also received honorable mention for panel (More news on page 424)

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THE RECORD REPORTS

REVIEWING THE RECORD

(Continued from page 420)



Shown in the September 1906 issue of the Record as examples of the work of McKim, Mead & White: above, the Boston Public Library; below, the library at Columbia University



Footnotes to architectural history, from the Architectural Record of 1906:

McKim, Mead & White, collectively, were the subject of a special issue of the RECORD in September, an issue which acquired an unfortunate timeliness through the death of Stanford White as the magazine went to press. The review, written jointly by Henry Desmond, the RECORD's editor, and Herbert Croly, its associate editor, was full of praise for the firm, saving that "in them the modern American architectural movement first began to find itself." The authors remarked also that "the essential unity of the trio has rightly been called the most complete association in the history of professional practice." Both writers, however, had frequently supported the architectural approach being worked out in the Middle West, and both were in essential disagreement with the "Beaux Arts" outlook held by McKim, Mead & White. "The best that can be said for the work of McKim, Mead & White," they wrote at one point in the article, "is that it is as good as it could be, consistent with making a good impression; but there can be no doubt that much was sacrificed in order to make the necessary impression. Not only was any intimate relation between the structure and form of a building sacrificed, but also any (Continued on page 428)



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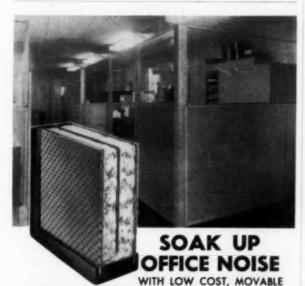
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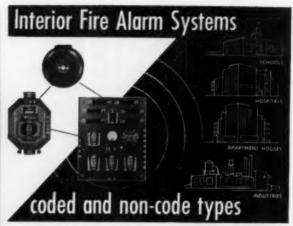
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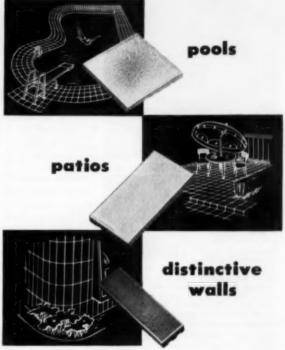


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REVIEWING THE RECORD

(Continued from page 424)



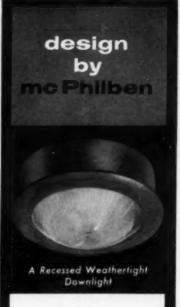
The old Madison Square Garden, designed by McKim, Mead & While, was, unlike the present one, located on Madison Square

fruitful relation between function and form. Architecture became almost entirely a matter of making those parts of a building which were exposed look pleasing and interesting." The firm did have something very valuable to contribute to the American architectural scene, though, the authors concluded: "Good architecture ought to be something more than beautiful, but it cannot be anything less. Without beauty, it may possess many admirable qualities, but will nonetheless be dead. Beauty is

(Continued on page 432)



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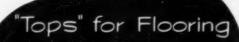


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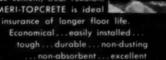


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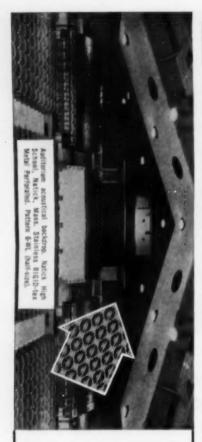


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THE RECORD REPORTS

REVIEWING THE RECORD

(Continued from page 428)

the child and the parent of artistic vitality, and in a country such as the United States, which was hopelessly deficient in beautiful things, no artistic progress was possible until some such plant was naturalized. McKim, Mead & White have started the process of naturalizing in this country beautiful buildings. They had to obtain them by transplantation, but that does not diminish the value of the achievement. They have made beauty in things architectural more familiar to Americans, and hereafter we shall then better be able to distinguish between buildings that are shapely and buildings that are

The battle of styles was being fought on still another front. Besides the Mc-Kim, Mead & White-Beaux Arts wing and the modern or Chicago wing, there existed also the Gothic wing, led by Ralph Adams Cram. In the Notes & Comments column of September, the editors quoted Cram's advice to churchmen seeking help in ecclesiastical design: ". . . from the first moment of recorded history, and whether in Europe or Asia, the laws and principles of good art were absolutely the same, whether expressed in the lines of a Greek or Buddhist temple, a Roman basilica, or a Gothic cathedral, down to some ill-defined point in the first half of the sixteenth century; and after that the laws were entirely new, and, except in music, literature and the drama, just as entirely bad. This, then, is the bar of justice before which any artist postulant for favor must plead. If in his words and work he shows that he understands, accepts and tries to follow the pre-16th century laws, then he is the man to tie to."



"A typical business structure" in Venice, California, was part of a story contributed in October by Day Allen Willey. Marsh & Russell were the architects for the resort



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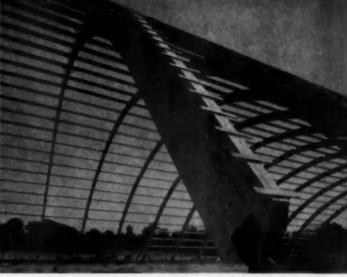


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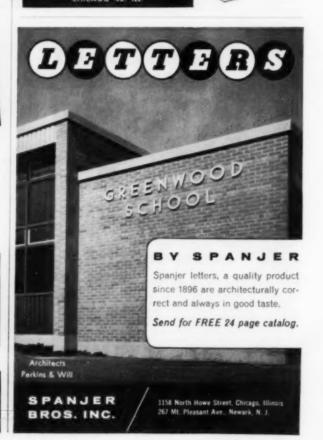
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THE RECORD REPORTS

(Continued from page 432)



WINNERS IN COMPETITION NAMED BY SCHOOL BOARD

The Parkway Consolidated School District, in St. Louis County, has announced that the winner in its competition for a junior high school design was the St. Louis firm of Hellmuth, Obata & Kassabaum, Inc., whose entry is shown above.

The Board of Education's program required, for immediate construction, a junior high school to accommodate 500-600 students. On the 102-acre site the board also wants to build, in the future, a high school, a transportation building to garage 15 school buses, a 20-acre residential development and park and recreational facilities.

For the junior high school, the board asked that the plans take into account the possibility of expansion; that the internal planning be flexible; that the school be usable for year-round community activities; that it be so designed that the students "will consider it the most desirable place in the community to learn, work and play"; and that it be built at a maximum cost of \$12 per sq ft.

Commenting on the calibre of the entries, the jury, which was composed of Charles R. Colbert, A.I.A., William W. Caudill, A.I.A., and George D. Englehart, "was especially pleased that a majority of the participants . . . were deeply concerned with the human and emotional values so essential to a school environment."

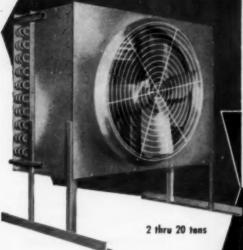
The jury's remarks on the winning entry indicated its particular appreciation of the study devoted to planning the total site and of the "intimate" scale.

Runner-up in the competition was the entry from Eric W. Smith Jr. and Robert E. Entzeroth. An honorable mention with special recognition went to Joseph Passonneau, and other honorable mentions to Bonsack & Pearce, Inc., and Edward J. Thias



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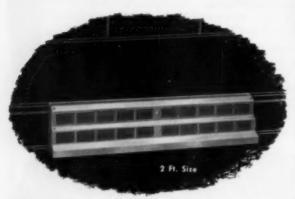
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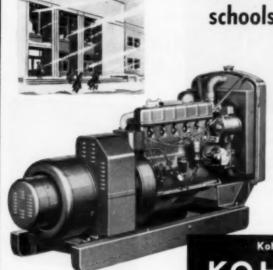
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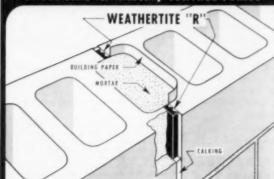
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REQUIRED READING

(Continued from page 60)



Niemeyer's final project for the Modern Art Museum of Caracas, Venezuela (1955), detaches itself clearly from the landscape and expresses "in the purity of its lines the forces of contemporary art."

LATEST NIEMEYER WORKS SHOWN IN NEW VOLUME

By RUTH WATSON MARTIN

Oscar Niemeyer: Works in Progress. By Stamo Papadaki. Reinhold Publishing Corporation (New York) 1956. 192 pp, illus, 810.

Niemeyer's projects from 1950 to 1956 are shown and studied in Stamo Papadaki's second volume about the Brazilian architect, Oscar Niemeyer: Works In Progress.

Again, one is intrigued by the plastic and dramatic quality of Niemeyer's work and the spatial problems that he solves. Through excellent photographs, sketches, plans and working drawings, one can see a daring idea evolve into a completed building. There are 30 examples of 15 building types presented, including the Quintadinha pyramid (see photo, above) and a number of houses. In brief captions and many pictures and drawings the development of each building is explained.

HE'S "DUNN" IT AGAIN!

Alan Dunn, whose cartoons appear regularly in Architectural Record and The New Yorker magazine, has just had another volume of his work published by Simon and Schuster (N. Y., 1956, \$3.50). Entitled "Should it Gurgle?" the new book is a compilation of 152 cartoons, ranging in subject from architecture to communism, which have appeared in The New Yorker in the past ten years. He has had three previous volumes published. F. W. Dodge Corp. published Dunn's The Last Lath in 1947.

Schools for the Very Young

by Heinrich H. Waechter, A.I.A. and Elisabeth Waechter



THOUGH many volumes have been written about school design, "Schools for the Very Young" is — so far as we know — the first in which an architect and a child educator have collaborated to provide an up-to-date treatise on the requirements of the particular type of school demanded for the proper training of the very young child.

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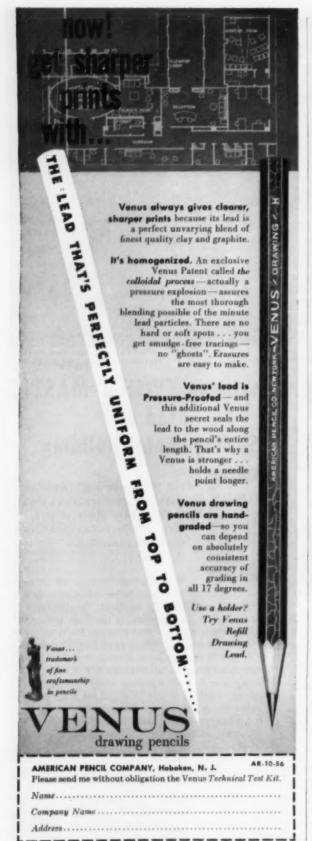


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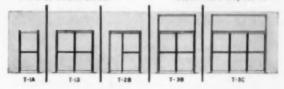
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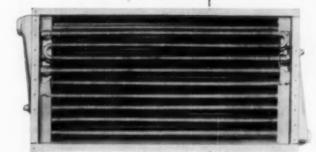
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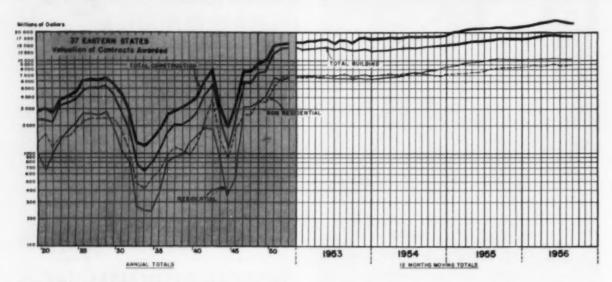
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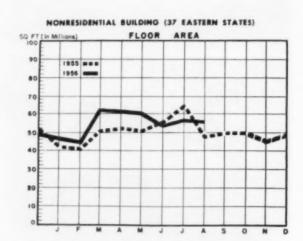


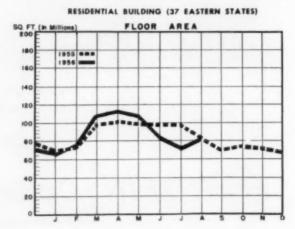
AUGUST AWARDS SET RECORD FOR THE MONTH

Contracts awarded in August showed a nine per cent rise over the total for the same month a year ago. According to figures announced by F. W. Dodge Corporation, awards for future construction made in August totalled \$2,068,754,000 in the 37 eastern states. This made August 1956 the biggest August on record. In terms of dollar value, records were set also in all the major categories: nonresidential contracts at \$746,787,000 showed a 10 per cent increase over August 1955; residential contracts at \$874,233,000 were five per cent higher, although the number of units contracted for declined; heavy engineering contracts, totalling \$447,734,000, increased 18 per cent. While August contracts did show a four per cent drop from the July totals, the eight months cumulative total continued to set a record for the year - with \$17,416,272,000 in awards, the first eight months of this year were eight per cent higher than the same months in 1955. The cumulative totals for individual categories show nonresidential contracts up nine per cent from 1955 with \$6,201,801,000, residential up one per cent with \$7,330,820,000, and heavy engineering up 22 per cent with \$3,883,651,000.

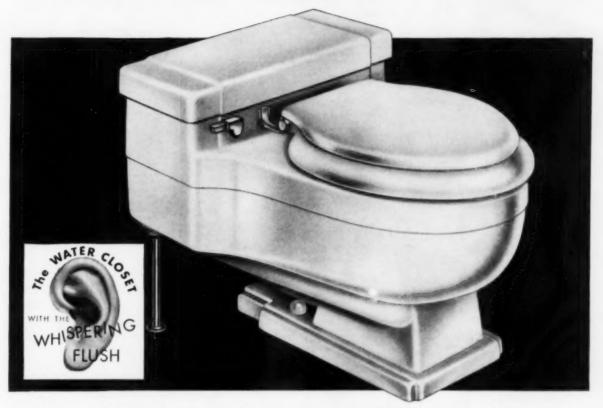
Source: F. W. Dodge Corporation SCHOOL" AND COLLEGE BUILDINGS Contracts Awarded—Regional Comparison Valuation (in thousands of dollars) Region 8 months 1955 8 months 1956 % change New England 95,476 109,444 Metro. New York 127,361 214,351 4-.68 77,451 Upstate New York 76.816 +.01 140,970 +.07 Middle Atlantic 157,206 129,401 -.18Southeastern 49,288 35,574 -.28 Pittsburgh Cleveland 92,928 73,308 -.21Cincinnati 36.082 38,716 +.07 Southern Michigan 101.690 100,881 +.01 176,969 204,369 +.15 Chicago 60,874 +.004 St. Louis 61,117 **New Orleans** 31,338 37,847 +.21 Minneapolis 61.297 73,854 +.20 54,637 60,740 Kansas City 4-,11 68,944 91,299 +.32 Texas 1,331,067 1,460,140 37 eastern states +.10 Schools are the subject of fluilding Types Study No. 239, pp. 221-256.

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Cutaway view of Milcor Super-Ex installation

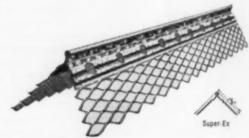
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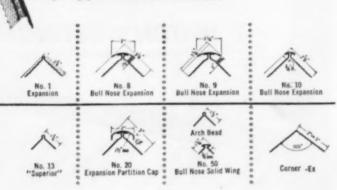
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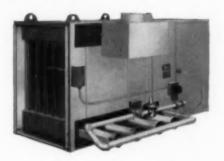
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